The Builder.

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The Royal Academy.

THE presence of the Prince of Wales gave additional interest to the annual dinner of the Royal Academy on the 4th instant; and the excellent and appropriate speech which his Royal Highness delivered clearly and well, touched all present. "I cannot on this occasion," said the Prince, impressively, "divest my mind of the associations connected with my beloved and lamented father. His bright example cannot fail to stimulate my efforts to tread in his footsteps; and whatever my shortcomings may be, I may at least presume to participate in the interest which he took in every institution which tended to encourage art and science in this country, but more especially in the prosperity of the Royal Academy."

When the President proposed the Health of the Visitors, he referred particularly to the position of *architecture* amongst us.

"The lovers of art," said he, "like those who are engaged in its practice, may still be supposed to contemplate a greater success than that already achieved: they, too, may be assumed to look beyond the present; to take an interest in all improvements; and, possibly, to ask themselves how their own influence can hereafter be most beneficially exercised. To such a supposed inquiry an answer may, without presumption, be suggested. If any part of the domain of fine arts can be said to be more worthy than another of their attention, it is perhaps that section which, in its various forms, is most before the world,—I mean architecture and public works. It should be borne in mind that if pictures are defective, they can be easily disposed of; that indifferent statues, and even objectionable small structures, can be removed; but spacious architectural arrangements and extensive buildings must remain, either as a lasting credit to the taste and good sense of the nation, or as a lasting stigma, which all would repudiate, but which all must be content to bear. It is unnecessary to point out examples of the latter description. It would be more useful to inquire whether the present,—that is, the customary and long-established mode of regulating such matters,—admits of improvement. Many are of opinion that, in order to insure that unity and consistency which are especially desirable in architecture, in order to avoid the incongruity which must result from successive controllers and desultory modes of proceeding, a permanent instead of a mutable directing authority is indispensable. To this suggestion constitutional objections are raised—objections which, after all, may not be insuperable. Few, indeed, would be willing to admit that the constitution of this country is incompatible with administrative arrangements calculated to promote the most important of the fine arts, the public interests, and the national honour. The truth is, art is too long to share, or be subjected to, the otherwise salutary vicissitudes of party. The changes of system consequent upon changes of administrations, to which we are accustomed in the fluctuating world of politics, need not extend to the calmer regions of art. Some of the noblest fabrics of the Middle Ages were erected amidst political storms, and as they slowly rose, looked with equal severity on the turmoils of men and the changes of the atmosphere. I will only add that I am far from agreeing with those who see nothing but defects in our own metropolis, nothing but perfection in those of the Continent. There is, indeed, abundance to admire at home; but the secret of success appears to be everywhere the same. In England, in some instances, a presiding architect; in others, private enterprise, duly controlled at the outset, have seldom failed to secure that comprehensiveness and continuity of purpose which are essential to completeness of result; and the same end is attained, only by a different process, in other States."

The Archbishop of Canterbury, in reply, touched properly the mission of art. Each of us, his Grace observed, "will regard that exquisite art which adorns these walls from his own point of view. For my own part, I cannot forget that in the early days of its revival it was the constant handmaid of religion; and that those great masterpieces, which seem to be the offspring of piety, were powerful aids to reverence and devotion. Altered circumstances did indeed, in later days, somewhat change the direction in which the current of genius used to flow. But still art has, and ever will have, a high and noble mission to fulfil. That man, I think, is little to be envied who can pass through these rooms and go forth without being in some sense a better and a happier man; if, at least, it be so, as I do believe it to be, that we feel ourselves the better and the happier when our hearts are enlarged as we sympathize with the joys and the sorrows of our fellow men, faithfully delineated on the canvas—when our spirits are refreshed by the touching representations of the playfulness, the innocence, the purity, and may I not add [pointing to Millais's picture of "My first Sermon"] the piety of childhood—when generous emotions are kindled by the spectacle of some great and noble sacrifice made at the call of duty and of conscience; or as we trace the lineaments of the great and the good [pointing to the portrait of Sir G. Cornewall Lewis], who have departed from this earthly scene, and their place knoweth them no more. May art ever employ itself in elevating the moral tone of the country, while it refines its taste; in purifying the character from base and sordid feelings, and prompting it to all that is good and generous and noble."

It was left to Lord Palmerston, however, to stir the meeting into hilarity and heartiness: "It is natural," said he, "that any man who is engaged in public life should feel the greatest interest in the promotion of the fine arts. In fact, without a great cultivation of art no nation has ever arrived at any point of eminence. We have seen great warlike exploits performed by nations in a state, I will not say of comparative barbarism, but wanting comparative civilisation: we have seen nations amassing great wealth, but yet not standing thereby high in the estimation of the rest of the world. But when great warlike achievements, great national prosperity, and high cultivation of the arts, are all combined together, the nation in which those conditions are found may pride itself on holding that eminent position among the nations of the world which I am proud to say belongs to this country." After dwelling at some length on the pleasure and varied advantages to be derived from the Exhibition, the Premier closed with a reference to the improvement effected there for the sculptors. "The present Government," said he, wittily, "has an apology to make to one department of art, and that is to the sculptors; for there is an old maxim denoting one of the high functions of art, which is *artis est celare artem*. Now, there was a cellar in which the art of the most distinguished sculptors was concealed to the utmost extent of the application of that saying. We have brought them comparatively into light; and, if the sculptors will excuse us for having departed from that sage and ancient maxim, I am sure the public will thank us for having given them an opportunity of seeing those beautiful works of men of whom it may be said,—

'—— vivos ducunt de marmore vultus.'

I trust, therefore, the sculptors will excuse us for having done not, perhaps, the best they might have wished, but, at least, for having relieved them a little from the darkness of that Cymmerian cellar in which their works were hid."

The Exhibition.

Unlike many preceding it, the present Exhibition of the Royal Academy maintains its character of superiority more by the diffused excellence amongst its constituent items than by any remarkable instances of supereminent performance. With no amazing planet to contend against, the steadier stars shine the more brilliantly; and this galaxy, being more really illuminative to those in the dark with relevance to our progress and position in art, deserves the greater attention for the highly satisfactory light it affords.

There is no great picture to assert dominion and concentrate excitement this year, and much less than might have been expected of the "sensational" order to show that that element is of such indispensable value as it needs must be considered in giving vitality to interest of any kind in our days. No such influence has been productive here of any such new and startling effects to be registered, as the spirit of the times might naturally have been supposed to evoke, unless Mr. Millais's wonderful Moonlight require patent protection, which can hardly be the case where copyright privileges are so defiantly impossible of extension; or Mr. Leighton claim some such reservation for his clever French dramatic adaptation of Biblical history, which is far less safe from imitation than his exquisite idealities, or rather dream realizations of more than earthly loveliness.

In the absence of this, to give it a distinctive recollection for future comparison, and to characterize it *per se*, it will be found to comprise an unusual number of very excellent works, and proofs of advancement corroborating the highest promise.

Of the members themselves most of them are represented in some degree; and if not in all cases adequately, they are at least very strong assistant causes of the effect; though, as is unquestionably the case, they may be under heavier obligations than usual to that class of our painters denominated "outsiders." Of course there are the usual exceptions. Mr. Maclise is a compulsory absentee, and much as he is missed, we cannot wish to see him present, as it would interfere with his mural paintings. Mr. Mulready, Mr. Dyce, and Sir Edwin Landseer are also wanting. Mr. Stanfield does not allow failing health to excuse his presence; and happily, if it interferes with the pursuit of his avocation, there is little symptom of decline in the five memorable coast scenes he now contributes. As fresh and truthful as ever, they appear to have gained in atmospheric appositeness, by a less precise touch than hitherto belonged to his method of execution. The most important of these is well calculated to show the advantage of this, and may be ranked with his greatest successes. "The Situation of his Majesty's Ship 'The Defence,' and her Prize, 'Il St. Ildefonso,' on the Morning following the Battle of Trafalgar" (123), with its long line of Spanish coast for a background, and comprehensiveness of stormy sky and sea, with the disabled ship for a leading point, is as interesting a manifestation of the mastery he has acquired over such materials as any former treatment of them could supply.

Mr. Phillip's large portrait composition undoubtedly ranks as an achievement in the class to which it belongs; but "The House of Commons, 1860," containing portraits of all the political heroes of the day,—and one of yesterday, unfortunately, — affords little opportunity for variety beyond that which the individuality of very successful likenesses can give to it; and, with all the power and richness of its rendering, it fails to have the leading attractiveness that almost any other subject of such importance from the same hand would have been certain of. The Premier has the House with him, evidently; and, governed seemingly by one impression, the

absorption has occasioned a monotonous similarity throughout the admirably-painted assembly. A pretty little incident of ordinary Spanish life has furnished him with a more congenial theme. In "Aqua Bendita" (23), a kneeling gipsy girl believes in its double consecration transferred from the hands of innocent childhood; and no more need be said of this work than that it is one of those examples that best justify his fame.

However much Mr. E. M. Ward may help in elucidating the more recondite probabilities of modern history, his name will always be associated with his "South Sea Bubble" reputation, and identified with the Hogarthian and Johnsonian period by his happy illustrations of it. With "Hogarth's Studio, 1739" (199), there is more to connect this work than a catalogue title would imply, and he has never turned to better account his aptitude for fully expressing the resources of any suggestion by the force with which he embodies it.

Reminded by Mr. Sala that "Hogarth painted a splendid portrait of Thomas Coram, who spent his fortune in cherishing deserted children, and in his old age was not ashamed to confess that he had spent his life in doing good. . . . We hope [so do we] they still teach every little boy and girl foundling to murmur a prayer for Thomas Coram;" and Mr. Ward has earned a share of the homage he so efficiently aids in securing the beneficent and persevering old captain by this appealing note of admiration. A holiday has been given to the little folk in order that they may visit the studio and see the picture; round which they throng in differently expressed admiration of its easily recognised resemblance; some with an open-mouthed bewilderment, others commenting on the most striking passages of it. One little perky damsel, who, with a deliciously natural expression of appreciation considerately gathers together her petticoats, that she may take up as little room as may be possible for so large a personage as she appears to imagine herself to be, is a charming contrast to the patient resignation of the poor cripple, so tenderly placed in a chair that she too may partake in the gratification of the inspection, and contemplate the image of one to whom she owes so many of the comforts she is conscious of. Two or three boys who would be critics if their stronger inclinations were not so distracted by the more alluring object of vision the kindly Mrs. Hogarth has become to them, from her occupation of dividing cakes and oranges, and making arrangements of entrancing promise for creature comfort that appear likely to affect a disinterested opinion (is there a latent sarcasm in this?), and a diversity of matter besides, all supply a fund of amusement to Coram and Hogarth, who, screened by the picture, are silent and unseen observers. "La Toilette des Morts" (124), represents Mr. Ward in another phase of notoriety. Charlotte Corday has more than once been invested by him with an extra amount of pathetic romance, and as circumstanced now, seated in the grim attiring cell of those destined to make a first and last appearance upon that stage on which she is so speedily to play out her short part of heroine, a rigid lifeless monument of despair, gazing with stony eyes at Hauer's scarcely finished portrait of herself as if taking leave of any recollection of her existence, Mr. Ward raises her nearly to sublimity, and at the same time, provokes a question if the German painter were really the last victim of enamoured idolization, as we are told he was.

We may not, however, continue our notice of the general exhibition this week, but must devote the remainder of our space, as in duty bound, to the

Architecture.

Forty-seven numbers in the catalogue of the Royal Academy Exhibition this year, are placed under the head "Architecture;" and one side, and a small portion of one end, of the South Room, comprise the space devoted to the drawings. The room being that which every visitor must pass through, entering or leaving the galleries, the small collection of productions essaying the representation of our art, has on the whole, a fair chance of being included by the public in the general round of inspection: thus, and helped by the speech of the president already quoted, architecture may be somewhat advanced to the appreciation by those who have the control of public works, no less than by all who erect or inhabit houses, of its importance as the art "which, in its various forms is most before the world,"—as that displayed in works "spacious" and "extensive" which "must remain either as a lasting credit to the taste and good sense of the nation, or as a lasting stigma which all would repudiate, but which all must be content to bear,"—or as one of those matters of study and pursuit which, referred to in the quotation in the catalogue, "nourish youth, delight old age, adorn prosperity, afford refuge and solace in adversity, delight at home, do not hinder us abroad,—pass the night, travel, go into the country with us." Such appreciation which it has been the duty of the *Builder* for twenty years to urge the fitness and importance of, but with too slowly coming attention from those who read, build, legislate, or govern, will perhaps become speedily the accomplished fact hoped for, now that the architect's view of his art's mission and office,—and therefore claims,—has been put forward, as in our own often repeated words, by so distinguished an authority as that which elicited a responding "Hear, hear," from the guests of the Academy. The audience then included persons with whom would lie the chief responsibility "to inquire whether the present, that is, the customary and long-established mode of regulating such matters [as those of public works] admits of improvement;" and whether it is not correct, "that, in order to ensure that unity and consistency which are especially desirable in architecture, in order to avoid the incongruity which must result from successive controllers and desultory modes of proceeding, a permanent instead of a mutable directing authority is indispensable," and that "constitutional objections" raised to the suggestion of change "may not be insuperable,"—since "few, indeed, would be willing to admit that the constitution of this country is incompatible with administrative arrangements calculated to promote the most important of the fine arts, the public interests, and the national honour." Other recognition of architecture than this for which we are thankful, remains as it has been in the Academy since its foundation; or rather the evidence which the Exhibition affords becomes, year by year, more unfavourable.

Notwithstanding it has been said, lately and before, that our art has not benefited by the influence of painters,—assertion which, regarding certain ages, we should not oppose,—we contend as we have urged at other opportunities, that a representation of architecture in the Royal Academy of Arts should be continued. If association of what are called the Arts be regarded as dissoluble on account of the fact of distinction between them,—in their office and in the expression allowed by the vehicle of each,—the home of Sculpture with Painting would be broken up, as that of our art likewise. Architecture, regarded not as science, but even as *art*, is to be distinguished with the widest interval from one or both of its so-called sisters; yet it can furnish, to Painting for example, as well as derive from it, both principles and details. Were architectural studies within the walls of the Academy better regulated, only in the matter of drawing, than they seem to be, it would be impossible to find the faulty drawing of buildings and their details, and the ignorance of perspective, which characterize a large number of the works in the several exhibitions of a season,—those, the productions of professed delineators and limners of buildings,—drawing which reduces immensely the result and value of works of some of our greatest masters of colour, and of light and shade, even in the eye of an observer who does not detect the fact of a deduction from his enjoyment, or may have nothing to say of the work before him but in its praise. In the Academy, however, there is now a competent teacher of perspective; thus it may be hoped that proper attention will be given by students, to one part of their respective pursuits which is common to painters and architects. To show that this expression of hope is hardly out of place, we may note that one evening, the occasion of a lecture by Professor Smirke, when some of the students demeaned themselves during the lecture in an ungentlemanly manner which we should be sorry to think could ever characterize more than a very small minority,—visitors passing through one of the rooms might see a drawing on the black-board, of a staircase, well executed and embodying an admirable lesson in perspective, with written beside it by some thoughtless *student*, the words "Leave this rubbish,"—the measure of *his* opinion of the value of the subject of Mr. Bowler's teaching.

Of the manner in which, year after year, the architectural drawings, whatever the number hung, are *exhibited* in the room in which space is accorded to them, we have spoken on each occasion, without result. If complaint be reasonably made by painters, of their works being placed at the level of a cornice, the case of architectural drawings much above or below "the line," is far more serious. The hanging at the Architectural Exhibition, in Conduit-street, goes beyond the limit: we should almost say that any position, off "the line," is nearly destructive to drawings of architecture, that is to seeing their details; for, upon details in buildings, much, even general effect, depends. The space given at the Academy, being for this reason of the hanging, subject to a deduction of perhaps half the number of the drawings on the walls, is from another reason and in the very principle of the so-called exhibition, no real presentation of architecture. It is an exhibition of *views* only, and generally one for each exterior or interior. Assuming them to be fair and correct, as well as taken each from a point that would or should be preferred by a person looking at the actual structure, views serve to convey a very small part of what will be looked at, of what it is the office of the structure to convey in the nature of architectural expression, and of what will be concerned in the question of merits. We have ere this endeavoured to point out to our readers, or at least remind them, that their impression of a work of architecture is derived in walking round it,—or as in the case of a work of sculpture,—rather than derived in looking at it from a fixed point, or even any small number of points. We are not discussing what may be possible in the room in Trafalgar-square; yet we must seek to understand the exact value of an exhibition of drawings, in order to know whether there might be ultimately avoided a mistake which is made in the whole system of the Academy in presence of our art, and in the particular formation of the architectural department of the exhibition, and to the end that we might even realize what there is in the way of lessons derivable from mere perspective views, and perhaps at length discover efficient means of aiding the views, or causing them to combine with something else in fairly conveying to the public, truthful information of the facts as in a building.

It is obvious that the drawings and description such as are followed by the builder in the construction, comprise the only accurate presentation of a building; and it is only from the fact that plans, elevations, and sections have to be put together, and the result arrived at by a mental process, which is difficult, that attempts to convey the meaning by a different method, a partial one, as perspective, are made. The difficulty, however, even to an architect, is such that perspective becomes of great service to him. Still, the perspective method of representation, to be complete, not only requires a number of views taken from every imaginable standing-place, but the art or science is founded on the mathematical theory that objects are seen from a fixed point, and that the eye is fixed as such point; which, untrue as to our vision of any object, even at some distance, is manifestly untrue as to the vision of the interior of a building. In that latter case, the eye must range over the widest area and in the largest angle bisected by an axis of vision; and no drawing has ever represented such a view as one down a cathedral nave, the same as was the impression, or rather sum of the successive visual impressions given to the mind. We never see drawings of their works exhibited by sculptors, in the Academy Exhibition: those artists avail themselves of the nearest approach to a *fac-simile* of the original; which fortunately, the comparatively small dimensions of works of the sculptor's art, and the use of plaster, combine to afford them. Some of the curves the most beautiful in the female form, are to be seen in the back and shoulders; what then is the value in the case of sculpture, not *relievo*, of one drawing, which would choose preferably the side including the face,—as compared with a cast? The answer should show what must be the insufficiency of mere views of buildings.

It would therefore seem to be a mistake in an exhibition of the best representations obtainable of buildings, not to include therein models. But, as of late, there are no models at the Academy. Objections have we know, been seen to the mode referred to, of representing designs. It has been supposed that models would be looked at by the public, much as were those of the several designs for the Wellington Monument exhibited in Westminster Hall, which were by many critics regarded as though models of the full size, for silversmith's work, or were regarded without any thought of scale, and inversely to their merits. But, much of the difficulty might be got over by explanation, and by figures to the proper scale; and by always carefully placing the model at the proper height, and restricting the eye of the spectator in some way to the proper level. It is a much more serious difficulty, in our opinion, that of getting

the models made, or with the mouldings and ornament delicately and exactly detailed. Scarcely one model in a hundred that we see, is really of the intended value; and we apprehend that money could not be easily found to produce habitually, even such models as some of the engineers contrive to get executed, that is, with the greater elaboration of ornament that characterizes most churches and public buildings.

We cannot, therefore, see the way to proper exhibition of architecture at the Royal Academy, without some admission, not obtrusively, but explanatorily,—of the element of plans and sections which we have succeeded in getting made a feature, though not a sufficient feature, in the exhibition in Conduit-street. In the latter case, indeed, because the exhibition addresses itself to architects, matters pertaining to convenience and construction deserve, or require, exposition and explanation. But our point is that the exposition of the *art* in a building, requires more of the nature of drawing than can be comprised in a single perspective, and generally something of the nature of plan and section. Sufficient might be given in two or three spaces, each the size of a crown-piece: it is the total omission of some of the chief requisites, and elements of effect meant to be conveyed by drawings, that we direct attention to as allowing the aim of exhibition to rest unattained, and as showing that the nature of architecture, the art, is not exactly understood and appreciated in the Academy itself. From this charge, however, we ought to except the present and former professors of architecture. Professor Cockerell devoted his lectures, rigidly as required, to the art-side of architecture: still, and rightly so, he dwelt much upon planning; and mere plans of the principal buildings of the world, were displayed amongst his chief illustrations. He also spoke energetically against the practice of getting up what were mainly to be viewed as "pretty drawings." Exposition of architectural art within the walls of the Academy, we may then conclude, needs something more than the drawings we are in the habit of seeing; or requires, at very least, enough to allow us to judge what would be the effect presented by the building, or portion of it, from changed points of view. The first step to improvement is to understand the character of the evil to be remedied.

Taking the drawings as they are, they form a small but rather choice collection. Amongst them are drawings representing some of the most important of the works, projected or in hand, for the improvement of London. Mr. Bazalgette exhibits three drawings (911, 919, and 921) showing proposed decorative features of his Thames embankment. All the three relate to the north side of the Thames. They show, besides the river-wall, parapet, and candelabra, a steamboat landing-pier to be constructed between Waterloo and Blackfriars bridges, a pier for the same purpose at Waterloo Bridge, and the landing-stairs, roads, and ornamental gardens between Hungerford and Waterloo bridges. The wall and parapet have the "sets-off," weatherings, cornice, and general mouldings, as simple lines which are broken by block-plinths bearing lions' heads in bronze, with rings, and forming the pedestals to carry the candelabra, and by larger pedestals to be mentioned shortly. The features of the parapet and wall are not in bad taste. We can scarcely say the same of the candelabra, which seem to be of the common form of dolphins, entwined and supporting a ring of gas-globes; or alternately, the form of a figure carrying the lamp in the hand. They would be neither monumental, nor according to true principles of decorative art. There are plenty of students at South Kensington, who would design better things. There were some of the works in the French division of the Exhibition of last year, that were in good taste,—because the supports were structurally as lamp-posts, and not as dolphins or lamp-carrying figures. In Paris generally, for out-of-door use, things of the kind are well done: in the new square of the Louvre, the candelabra are charming,—too costly for English reproduction, though suggestive as models. But in Mr. Bazalgette's design of the landing-piers, some of the features must be modified. The dummy or floating-pier lies in a recess formed by two bold projections of the masonry, which carry pedestals. These latter features, in the drawing of the pier between Waterloo and Blackfriars Bridges, bear sculpture in bronze, in panels of the dado, but no sculpture on the top. A pedestal is for the support of something; and as the features exactly resemble ordinary pedestals in the mouldings—though they may be intended to mark and enclose the recess,—it may be questioned whether, if the pedestals are to support no sculpture, the projections on plan should not be differently treated. A third mass of masonry carrying a pedestal, but its longer axis parallel with the parapet line, is engaged in the centre of the recess, and carries a bronze group with the god Neptune; so that the omission of sculpture in the other case, no doubt was intended. Another questionable matter is the immense bulk of these pedestals, following a common error as made in the enclosure of the British Museum, and even by Sir Charles Barry in that least satisfactory of his works, Trafalgar-square. The blank bulky mass of masonry is bad enough, where there is adequate weight and a feature upon it. Could nothing be tried to break by curves the ever-repeated rectangle of plan of pedestals? Even the perfect oval would harmonize with some groups, and afford variety. Looking at other features of Mr. Bazalgette's design, the light kiosk-formed structures on the floating piers are tasteful; indeed, we should be far from saying that these particular steam-boat landing-places would not be a great improvement on anything at present to be seen on the river. Opposite Norfolk-street and Arundel-street, considerable space would be laid out in gardens; but the absence of a plan does not allow us to see whether shrubs and horticulture would contribute as much to effect seen from the bridges, as they might be made to do in good hands. The landing-pier at Waterloo Bridge is by no means a successful design. Difficulties of the case of a roadway made to pass beneath an arch which *had been* designed as a waterway and part of a series of arches, are not simply ungrappled with; the want of harmony between bridge and embankment is greater by the presence of new architectural features than it would have been without any of these in the embankment. A great projecting pier, with pedestal carrying a group in bronze, terminating the recess for the dummy on one side of the bridge, is matched by a corresponding arrangement of pier and recess on the other side of the bridge; whilst the connecting line, the parapet of the embankment-roadway, bores through the bridge in appearance, to take up and join pedestal to pedestal. The two designs,—bridge, and landing-pier,—interpenetrate, but do not harmonize; for, even symmetry, which seems to have been the aim, is attained from no point of view. The pier of the bridge should be brought into the new composition as part of it, and the feature of a great pedestal without symmetry of position or harmony with anything, should be modified, as also should the parapet where passing under the arch. In the third drawing, where this pedestal again appears, the artist has omitted the sculpture, perhaps feeling that the whole feature was too prominent. The third drawing shows the area between Waterloo and Hungerford Bridges laid out as a terrace-garden partly on the roof of premises forming a line of shops on the embankment. Across this garden is a descending way, perhaps from Salisbury-street, intersecting a circular sunk-area in which there is a fountain. Opposite this way, and projecting from the embankment, are stairs, descending right and left from a landing,—the raking parapets having reclining lions. Seated figures in bronze, on square pedestals, mark the openings in the parapet.

A finely-executed drawing (922) exhibited by Mr. J. Taylor, jun., shows "The London, Chatham, and Dover Railway Station, now in course of erection at Blackfriars," that is on the Surrey side of the river; and shows also enough of the new City bridge, and the railway-bridge, to give an idea of the design of each, and the combination. The two bridges, if we see correctly without a plan, do not exactly correspond in the position of the piers. The first opening of the railway-bridge, however, may be said to correspond with two openings of the road-bridge. The levels will be very different, the railway-level being much higher than the road-level. Thus, whatever fate may attend the view up Ludgate-hill, that of the view of St. Paul's from the road-bridge may be considered settled. In itself, the railway-bridge has a character of art-architectural which we have not seen exemplified in any previous work of the same kind of construction. The meeting-ends of the lattice girders are supported by a row of piers,—each pier formed of a cluster of shafts, resembling red granite, and with regular capitals and bases as stone,—whilst upon the outer shaft, and masking the junction of the girders and rising above them, is an ornament combining somewhat the form of a small buttress with that of an antefixa. The result altogether, shows there is no reason why railway-bridges, even girder-bridges, should not be always ornamental. The London, Chatham, and Dover Company have certainly shown desire to contribute by their stations, and some of their viaducts, to the architectural effect of London and its suburbs. The Blackfriars station (which seems to be in combination with a wharf) is built generally of yellow brick, the decorative effect being got by the introduction of red and black bricks, in addition to dressings in white stone or terra-cotta,—the reds and blacks in bands and arches being judiciously subordinated to the main tint of the walls. The openings are arch-headed, and chiefly pointed-arched. The City bridge, already illustrated in our pages, we may say, as shown in the drawing, is remarkable, as the other, for some attention to decorative qualities. The ribs are ornamented with *rosettes* cast on them, and the spandrils are filled in with lattice-work which is similarly ornamented. Whether the faces of the piers are rightly treated, with an imitation of stunted shafts of columns on a large scale, may be questioned. There is a cornice, with some amount of carving, in place of capital, to each of these columns, and a base; and each pier is terminated by the parapet of the recess of the footway, decoratively treated by perforations.

Prominent likewise on the "silent highway," is Mr. M. D. Wyatt's building now erecting for the Government of India, and to be appropriated for military stores. It is displayed in two views, one of the exterior (897), as seen from the river, and the other of the court-yard. We cannot reconcile ourselves to it. The river front is made up of a multitude of small arch-headed openings; whilst in the centre of the lower part of the front, is a great undecorated arch, opening into the yard. The contrast between these large and small features, certainly seems to us a harsh one. There is a certain amount of grouping of the small openings, a portion of them being arranged in threes, whilst others are single; and the windows of the top range have cusped tracery of Venetian Gothic character; but these matters of detail do not tell much at a distance, and the general effect is what we have described.

Small as is the number of drawings, we are not yet through them.

MONUMENTS AND MEMORIALS.

THE suggestion of raising a monument to Shakspeare, to be unveiled on the 24th of April, 1864, which is the tercentenary of his birth, finds increasing favour. Trafalgar-square has been proposed for the site.

The inauguration of the Wellington Monument at Liverpool will take place shortly. The statue has arrived, but, as it exceeds, by a ton and a half, the weight that was originally fixed for it; the scaffolding around the pillar required strengthening, and machinery of greater power had to be procured.

A monumental cross has recently been erected on the Grand Parade at Portsmouth, in honour of the officers and men of the 8th Regiment of Foot who were slain or died from disease during the Indian Mutiny. The form chosen for the monument is that of the old Irish cross. It is composed of Sicilian marble, the plinth of red Mansfield stone, serpentine and green marbles, and the sub-plinth of granite. The names of the officers and men will be engraved on the shaft. The design was by Mr. Leifchild, and the construction by Mr. Underwood, both of London.

A numerous and influential committee of noblemen and gentlemen in the North of England, including many of the distinguished members of the Chetham and Historic Societies (Lancashire and Cheshire) is now in course of formation, for the purpose of carrying out a project which has been entertained for some time past of erecting a memorial statue, in the town of Bolton, of James the seventh Earl of Derby.

The foundation stone of the Tyndale Memorial will be laid on the 29th inst., by the Hon. Col. Berkeley, M.P. The site fixed upon is Nibley-knoll, in the village of North Nibley, near Wotton-under-Edge, Tyndale's birthplace.

At Ironbridge, the widow of the Rev. J. Bartlett has given her consent that the memorial fountain commenced some time since and partially erected, should be taken down and re-erected on a more convenient and important site. It now stands in the centre of the flight of steps leading from the road to the Market-square, at the east end of the Tontine. The fountain is now completed. It consists of a plain quadrangular obelisk, whose base, plinth, and column, are of polished Aberdeen granite. It stands sixteen feet high above the platform. This is constructed of dressed Wenlock limestone and finished with York stone. The work has been completed under the superintendence of Mr. Samuel Nevitt, Ironbridge.

COMTE DE VOGÜÉ ON THE HOLY SEPULCHRE.

IN the second edition of the Rev. George Williams's "Holy City" will be found a long chapter, by Professor Willis, entirely devoted to the architectural history of the Holy Sepulchre. It is almost needless to say, when the latter gentleman takes up a subject, that hard things become easy; for no one in our days has ever read more sermons in stones than he has. In the present instance not only have a vast number of old authors been brought forward as witnesses, but assistance for the architectural restoration of the church of the Crusaders has even been obtained from the inlaid wooden models made by the Jerusalem monks and sold to travellers in the last century. The professor concludes his clever and interesting notice with the following words:—

"An accurate research into the existing building by an architectural student well versed in Mediæval structures, would, I am confident, detect sufficient remains of the church before the fire in 1808, represented in my sections, to form a much more complete and more exact one; and I trust my attempt will induce some traveller to set about correcting my mistakes, and resolving the difficulties which I can only pretend to have pointed out, happy if in so doing I shall have succeeded in exciting the interest which always attaches to an object of research once indicated."

This is exactly what has been done by M. de Vogüé in his work on the "Churches of the Holy Land."* After the excellent summary lately given of it by Mr. Wigley at the Architectural Museum (which still, alas! remains in confusion at Brompton), it would be useless to do over again what has been done by so very competent an authority, and who, moreover, has had the immense advantage of seeing all the localities.† But the "History of the Church of the Holy Sepulchre," as published by Professor Willis and re-edited by M. de Vogüé, is so useful and so instructive an architectural study, that it would surely be no loss of time to give a short summary of it from the "Eglises de la Terre Sainte." It must, however, be carefully kept in mind that the basis of the whole story belongs to our countryman; and no one has been more forward to acknowledge this than the gentleman who candidly confesses his obligations by telling us that "this memoir, full of talent and erudition, has continually served me as a guide in my own researches; and if my interpretation of some passages differs from his, I ought to say that, after all, he was the first to indicate the true way, and that I have been obliged to borrow for my own work the complete scheme of his memoir.

The history of the Church of the Holy Sepulchre divides itself into four periods. The first comprises the time between the foundation of the basilica, by Constantine, in 326, and its destruction by the Persians under Chosroes in 614. The second extends from the restoration, by Modestus, to the second destruction by the order of the Caliph El Hakim, in 1010. The third, from the reconstruction, in 1048, until 1130, when the Crusaders built a large church, covering the whole of the sites. The fourth epoch terminates in 1808, when the church was so much injured by fire, that an incompetent Greek architect could find no other means of safety than by entirely covering the old building by an exceedingly thick new casing; so that in the present day we do indeed possess the church of the Crusaders, but cannot see it. I now propose to follow M. de Vogüé through his account of each of these epochs. At the same time it should always be kept in mind how very large a share of the work belongs to Professor Willis.

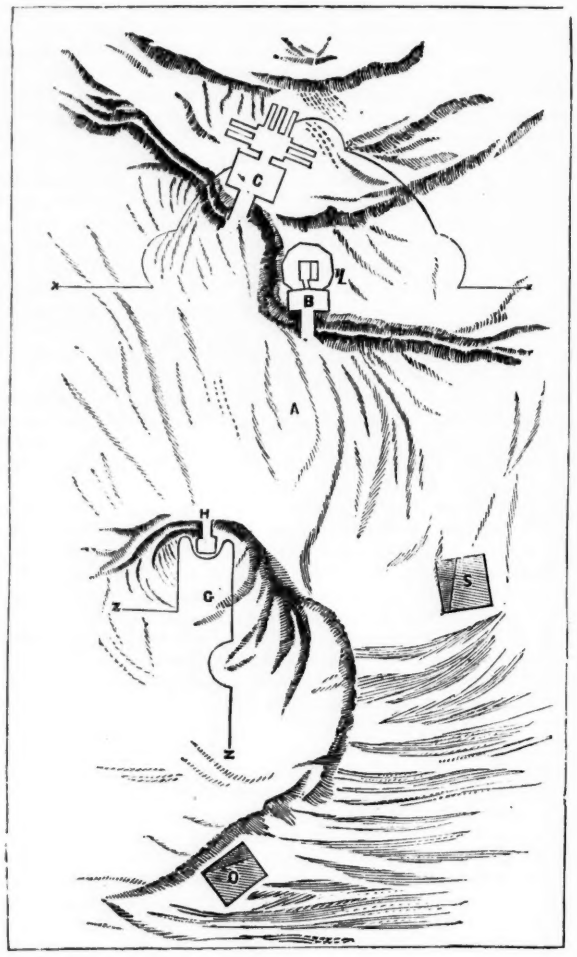


FIG. 1.

FIRST PERIOD.—326 to 614.

The Basilica of Constantine. — In order to understand the works undertaken by order of this emperor, it will be as well to begin by a short description of the locality of the Crucifixion and the sepulchre of Our Saviour as they existed previously to the fourth century. At the present time, when we see the Christian quarter of the town occupying so much space immediately around the holy sepulchre, it is rather difficult to imagine that this spot was formerly situate without the walls of the ancient city; but such must have been the case, and moreover, portions of the wall which excluded these localities from the town have recently been brought to light.

At a short distance from this wall there was a small ravine, marked A on the plan (fig. 1), which level is now that of the paving of the modern church. On either side of this ravine the rocks rose abruptly to the height of from 12 to 15 feet. On the rock to the east was the place of the Crucifixion (marked G), and below it (H) a little excavation, known in later times as the tomb of Adam. The opposite rock, at the west end, was pierced with two tombs, each of which had a vestibule. The larger excavation (C) is generally known as the tomb of St. Joseph of Arimathea; and probably because all the niches were occupied, he caused a second tomb (B) to be excavated at a little distance. This latter consisted of the usual vestibule and an inner chamber, on the north side of which was a recess for a body, covered with a semicircular niche; the entrance into the inner chamber from the outer was by means of a very narrow and low doorway, which was closed by a large stone. It was in this inner chamber, and in this recess, that the body of Our Lord was placed by the care of his disciple St. Joseph of Arimathea, who subsequently, contrary to the usages of the Jews, caused a tomb for himself to be excavated in the floor of his family sepulchre.

When the Emperor Hadrian tried to establish a pagan Jerusalem, hating alike the Jews and the Christians, he dedicated a temple to Jupiter on the site of the Temple, while he caused the ravine A to be filled up with earth, and upon the ground thus levelled a temple was erected to Venus. When, however, Christianity triumphed under Constantine, this temple was removed, and the ground restored to its natural level by the removal of the accumulated earth, and the construction of a great basilica to inclose all the holy sites was commenced. Eusebius has preserved us a letter from Constantine to the Bishop Macarius, the most interesting portion being that in which he wishes to know whether the ceiling of the basilica should be decorated with caissons or some other ornament, and suggesting that if the former be preferred, they should be gilt. Eusebius, in his "Life of Constantine," gives us a description of the basilica itself, but unfortunately not a very clear one. From it we learn the following particulars:—1. The sacred cave was ornamented with choice columns and decorations. 2. There was an extensive space open to the sky, paved with polished stones, and surrounded on three sides with long cloisters. 3. On that side of the court placed opposite to the cave was the basilica, the interior of which was lined with marbles and the roof covered with lead, while the gilded ceiling caused "the entire building to shine as if with the rays of light." 4. There were double aisles on either side, and three doors at the east end. 5. Opposite to the doors was the apse, surrounded with twelve columns, having silver capitals. "Hence, going forward to the entrances which were before the temple, he interposed an open space, viz., between the basilica and the portals; there were also recessed chambers (*exedræ*) on each side the first or entrance court, which had cloisters attached to it; and, lastly, the gates of the court. Beyond them, in the very middle of the wide market-place, stood the propylæa or vestibules of the whole work, which, being decorated in the most imposing manner, afforded to those who were passing a promise of the wonders within."* From this description and from sundry fragments still remaining, and which he thinks belong to the edifice of Constantine, M. de Vogüé constructs the plan shown in the accompanying cut, in which it is only fair to state that he differs very considerably from Professor Willis. One of his discoveries, indeed, the pillar at O, fig. 2, is very summarily dealt with by Mr. Fergusson, in his pamphlet, who asserts that so far from being a relic of the time of Constantine, it must be referred to that of the Crusaders.

The first operation of the workmen employed by the emperor was to level so much of the surface of the rock as was required for the new church, leaving, however, the rock of Calvary standing up on the eastern side, and the Holy Sepulchre on the western. In the latter instance the vestibule was destroyed, and the outside of the sepulchre fashioned into a polygonal form, and decorated with a marble placage and attached columns. Professor Willis, however, thinks that the columns were disposed as a peristyle, while the rock formed the cella; in fact, the same sort of arrangement as we see in the temples of Vesta. It was also found necessary to remove the whole of the vestibule, and the greater part of the tomb of St. Joseph of Arimathea: that part, however, which was outside the apse has remained to the present day. M. de Vogüé considers that we have still three distinct portions of the basilica remaining:—1, the foundations of the apse with its little chapels, which have determined the shape of this portion of the church ever since; 2, the angle impost and springings of arches at O, which Mr. Fergusson attributes to the Middle Ages; and 3, the remains of a portico at *p*, which were first discovered by Doctor Schultz. From these two latter remains M. de Vogüé has been enabled to reconstruct the propylæa, *p p r r*, and the atrium, *r r m m*. In the interior we have the apse with its little chapels, *a b c*, and an arcade of twelve columns: the position of which corresponds with that of the arcade of the present church; indeed, several of the bases of the latter are said to form part of the living rock. In the centre of the space enclosed by these columns was the holy sepulchre B, which, according to Antony of Piacenza, was formed of the same stone as a millstone, while the roof was of silver, and a great quantity of valuable offerings were suspended by iron rods: this description probably refers to the inside. At *d* was the stone which formerly served to close the sepulchre, and which was rolled away by the angel. This was divided into two parts, one of which, covered with gold and gems, remained *in situ* at *d*: the other served as an altar, where Our Lord was crucified. Proceeding eastward, we find transepts (as at Bethlehem and Paul's without the walls at Rome), in the centre of which was the altar. The nave had double aisles, the row of pillars nearest the nave being

* "Les Eglises de la Terre Sainte." Par le Comte Melchior de Vogüé. Paris: Didion. 1860.

† See *Builder*, p. 256, *ante*.

* Professor Willis's translation of the passages has been used. See Williams's "Holy City," vol ii. p. 245.

circular columns, while those between the aisles were square piers. Above was a triforium and clerestory supporting the gilt coffered ceiling. In the outermost southern aisle rose up the rock of Golgotha, not so high, however, but that it left something like 9 or 12 feet clear between its top and the ceiling of the aisle. This upper surface

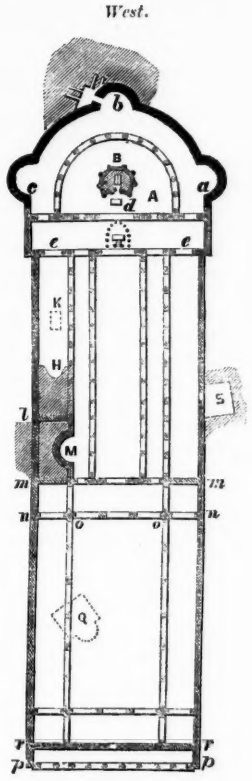


FIG. 2. – *East.*

was occupied as far as *l* by a chapel, and the rest of the space from *l* to *m* being closed up with walls to hide the irregularity of the site. The excavation M, if ancient, was dedicated to some Christian tradition, such as the division of the garments. At H, under the hole for the cross, there was a small natural hollow, which was enlarged and afterwards formed the apse of the chapel of Adam. We still see the crack caused by the rending of the rock mentioned in Scripture. According to tradition, Adam was buried in this hollow, and the blood of Our Lord running through this crack flowed upon the skull of the first man and washed away his sin. This is the origin of the skull we see at the feet of most of the crucifixes. In the Middle Ages, Adam is frequently represented as being brought to life by the blood of Our Lord,* a far more poetical way of rendering the tradition than the usual skull. K was the stone upon which the body of our Lord was placed before it was deposited in the sepulchre. S was a cistern called the prison, from a tradition that Our Lord was placed therein while preparations were being made for the crucifixion; and Q another cistern where St. Helena found the crosses.

SECOND PERIOD.—614 to 1010.

The Churches of Modestus.—When Chosroes took Jerusalem, in 614, his army was followed by thousands of Jews, who are said to have been most active in the work of destruction: the consequence was that the magnificent structure of Constantine was totally destroyed, and when Modestus, afterwards patriarch of Jerusalem, with the help of St. John the Almoner, had completed the work of restoration after fifteen years of labour, the result, instead of a large basilica, with its atrium, &c., was simply a number of small churches each covering some venerated spot. The reasons for this change were twofold: in the first place, the funds were limited; and, in the second, the Byzantine domed church had supplanted the basilica. We therefore find four distinct edifices: 1, the Church of the Resurrection, built over the Holy Sepulchre (see A, fig. 3); 2, the Church of Golgotha, H; 3, the Church of the Invention of the Cross, P; and 4, the Church of the Virgin, K, built over the unction stone. These four churches were connected together with walls, and the court in the middle was paved with marble. The principal authority for the restoration of the churches of the second period is the well-known description of Arculphus, as taken down by Adamnanus, abbot of Columba, in Iona, who furthermore induced him to draw a plan upon a waxen tablet. Two editions of this plan have come down to us, one of them being published for the first time in the present work.

The Church of the Resurrection.—Modestus found the apse of Constantine's basilica still standing, or at least sufficient of it to serve as a foundation for the new work. The eastern wall of the transept, *e é*, was also probably in the same condition, while the bases of the colonnade being cut out of the rock would be equally available. The colonnade was therefore carried on until it met the walls of the transept, from which latter sprang three apses. The walls of the apse were continued from *a* and *e* to *e* and *é*, and pierced with five doors on each side. Outside the eastern apses was a semicircular portico. We have thus by the extension of the apse built by Constantine the first circular church of the Holy Sepulchre. The rock itself was covered with engaged columns and marble, while two columns at the east end were connected to the others by means of low walls; within was, *d*,

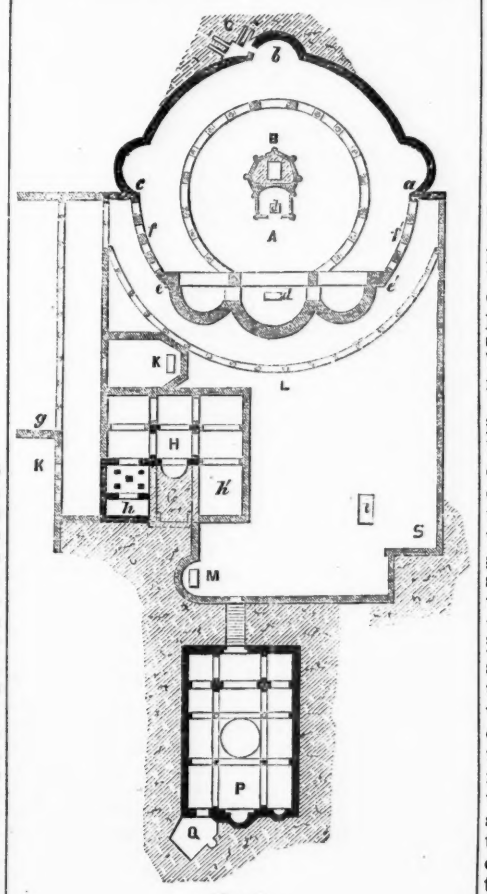


FIG. 3.

one part of the stone of the angel, used as an altar; the other half served as the high altar in the principal eastern apse. It should be remarked that the space over the Holy Sepulchre was open to the air in all the constructions which succeeded one another.

The Church of Golgotha appears from Arculphus to have been larger than it is at the present day. M. de Vogüé has therefore added a bay to the west and an aisle to the north, *h'*; he also supposes that there was a cupola at H.

The Church of the Invention of the Cross, known throughout the Middle Ages as the Basilica of Constantine, was also a construction which owes its origin to Modestus, although the Crusaders rebuilt the vaults. It is a church (for it has undergone very little alteration in the plan and lower parts) precisely like so many that are found in Greece and Syria, consisting of three apses, a centre dome, and a western narthex. Beyond it, at Q, is situate the cistern where St. Helena found the three crosses. At present the floor of the chapel is some 16 feet below the floor of the church above, and it is rather puzzling to conceive why Modestus built it at this level. The cistern, Q, is some 9 or 10 feet lower.

The Church of the Virgin, in the eleventh century, contained the unction stone, and M. de Vogüé has therefore placed it at K. At M is the *exedra* noticed in the previous plan, and in Arculphus's time, the repository of the chalice used by our Lord on Good Friday. At I was a table for alms, said to indicate the spot where Abraham placed the wood when about to sacrifice Isaac. At S was the spot called the prisons; and at L a place where sundry chains attached to the neighbouring churches met together, and which was supposed to indicate the centre of the earth. Finally, Arculphus shows sundry lines to the south of the Chapel of the Virgin which M. de Vogüé identifies with the ruins of a portico still remaining.*

W. BURGES.

* See the Arundel Psalter in the British Museum.

THE SPREAD OF SMALL-POX AND FEVER IN THE METROPOLIS.

IT is with very great concern and regret that we have noticed the increase of the first-named pestilence. In Islington, among the houses which stand between the Caledonian-road and the York-road (formerly Maiden-lane), the cases seem to be increasing in number; and so serious is the result, that it calls for some active measures for preventing further mischief. It is not children only who are attacked, but men and women in the strength and prime of life, and even persons advanced in age. Small-pox, as we have before noted, is also raging in other parts of the metropolis; and, amongst other districts, we now learn that cases have occurred at Battersea, where typhus fever has also been prevalent.

A few years since the late Prince Consort directed special attention to the increase of small-pox in the large towns of England; and since then several persons of well-known ability have pointed out the danger which was likely to ensue in consequence of the neglect of vaccination—not only amongst the poor and ignorant classes, but also with many who are well informed and in better positions; and now the time seems to have come when the public of London must suffer the consequences of such neglect. The metropolitan Hospital appointed for the reception of cases of small-pox is full, and applications are constantly being made at other hospitals and at the infirmaries of the workhouses for admission.

As regards the Islington district, which, according to the medical officer of health's report, has been excessively unhealthy of late, we have made careful inquiry and received fresh proof of the ill-effects of bad sanitary arrangements in connexion with both small-pox and whooping-cough. At the back of Bemerton-street, on part of the ground on which the Sunday Fair, some time since described in the *Builder*, used to be held, there still stand a number of miserable and unwholesome cottages. The rooms are very small, ill-ventilated, and for the most part dirty. These are only one story high; and, being planted in the old-fashioned way upon the earth without provision for drainage, the walls are rotting with damp; and what adds to the evil is, that many of the houses are over-crowded by poor distressed families. We are told that the small-pox has visited nearly every one of these houses: nor will any one wonder at this who has seen the condition of the places. In one of the cottages a case of small-pox first occurred; and it then seems to have spread thence through the others to Stroud's-vale, Bemerton-street, and the adjoining neighbourhood. In the course of a tedious inquiry, we found that vaccination had here been greatly neglected; — that in several instances those who had been vaccinated in childhood had been attacked by this disease; but, in almost every instance, the cases were slight in comparison with those in which vaccination had not been attended to. Since there can be no doubt, as every one knows, of the infectious nature of the small-pox, particularly in such over-crowded dwellings as those to which we have so often referred, it is a most important duty in all who have the charge of the health of parishes and districts, to provide means for the immediate removal of afflicted patients, and suitable places for their reception. At present, when the hospital is full, the parish authorities are bound, if required, to remove those sick in this way to the infirmaries of the workhouses; and as, in most instances, there is no distinct provision in such infirmaries for those who are ill of fevers and smallpox, this is attended with considerable danger; and it has been recommended by the Metropolitan Association of Medical Officers of Health, that, in consequence of the increase of mortality from small-pox, the guardians of the poor and other local authorities should take the matter into consideration. The Association, while recognising the total neglect or inefficient performance of vaccination as the great cause of the mortality in question, consider it not the less apparent that the prolonged residence of

* To be continued.

infected persons in rooms occupied by others, the exposure of such persons in the streets, in public conveyances, in the waiting-rooms of hospitals, and the absence of adequate means of isolation, have been the immediate agents in bringing about the recent rapid diffusion of small-pox to a degree unexampled in the epidemic of 1859-60; and that, in consequence of the want of room at the Small-pox Hospital, it is necessary, during the epidemic, to provide temporary buildings, in such situations as are best suited for the purpose, on the double ground of distance from inhabited houses, and facility of approach; also that public attention should be called to the importance of vaccination, and the nature of the law in connexion with it.

Although we know that there is a prejudice against vaccination, we believe that this is based on such slender grounds that, if the Act of Parliament were properly enforced, in nine cases out of ten the parents would conform with what is necessary for the safety of their children. There is great carelessness, rather than positive prejudice, respecting vaccination amongst many parents; and good would be done if those who have the care of this duty were to make inquiry at the national and other schools for cases of neglect in this respect; but far more good would follow a house-to-house, or even a room-to-room visitation, in the poorer districts, particularly those in which the small-pox is now prevalent.

We have still, as we have ever had, no doubt that typhus fever, small-pox, and some other complaints of the same class, are preventible: we see that the worst and most numerous cases occur in places which are neglected in sanitary arrangements: we find that in these situations diseases of this description spread, if care be not taken for the timely removal of patients. In the wretched homes existing, the death-rate of those who are stricken with disease is enormous: even in the Islington Fever Hospital the number of deaths is large; but it must be considered that, for the most part, the worst cases only are brought here. Large as the number of deaths is in a spacious place such as this, where care is taken of ventilation, and where there is the best medical attendance, there can be no doubt that if the same patients had been allowed to remain in their homes, the number of deaths would have been doubled.

In the Fever Hospital there are written, in a large volume, the names of those who are brought to the hospital, and an account of the neighbourhood in which they had been living; and these entries, we find, agree in a very remarkable way with the state of the drainage and other sanitary conditions of districts. There are many cases in the suburban neighbourhoods, in Deptford especially. Here, in New-street, Griffin-street, and Mill-lane, not only in ordinary dwellings, but in licensed lodging-houses, typhus fever has been raging. This is a matter which requires not only the attention of the district officer of health, but also of the police authorities. It is notable, however, that the licensed lodging-houses in St. Giles's, and those in the City and several other parts, seem to have been free from virulent fevers.

Bethnal-green, St. George's-in-the-East, Dock-head, Bermondsey, parts of St. Martin's-in-the-Fields, Little Saffron-hill; Perry-terrace, St. Pancras (a place which we have before noticed); Redcliff-square, Stepney; Charles-street, Mary-lebone, &c., &c., yield many cases of typhus fever. We will by-and-by give some account of these fever dens; particularly those in Deptford; but, in the mean time, we may remark that those who have the care of the health of parishioners ought to be watchful, in neighbourhoods where fever and small-pox are prevalent, to see what drainage or other sanitary improvement is required; and to endeavour, by all means, to remove those who have been seized with these disorders. In the report for 1861 of the Fever Hospital, it is said—"Much has been done. The victims of typhus, since we have had boards of health, with their medical officers and their inspectors, studying each court and alley, are reduced in numbers. It is now five years since we had a serious and open epidemic." Such fluctuations there have always been; but the filthy pool of fever, if it has not always overflowed, is still among us, ready to overflow again; *and it has no right and no unavoidable occasion to be amongst us at all.* All typhus and typhoid fever is preventible. There is much to be done before it be exterminated throughout London; but that we have made some head against the monster is precisely the reason why we should not relax in the war we are bound to wage against it.

FOOT'S CRAY CHURCH, KENT.

THE "CRAYS."

As you travel on the London, Chatham, and Dover line, you may see on leaving Bromley the parish church of Foot's Cray, which has been partially restored under the direction of Mr. E. C. Hakewill. This was recently reopened with special services. The old pews have given way to open seats, and all galleries have been removed. A new open roof has been placed on the nave, and the nave itself elongated westward, leaving the old wooden bell-turret and spire in their original position. Three new bells, by Messrs. Warner, have been hung, and are rung from the floor of the church. An organ-chamber, too, has been thrown out on the north side of the chancel, and a new organ is being built by the Messrs. South, of Gray's-Inn-lane. Part of the staircase to the old rood-loft remains, the openings to which have been restored, and form the access to a new stone pulpit. A remaining panel of the rood-screen has been introduced into the front of the prayer-desk. A brass lectern, by Hart, is the gift of former parishioners of the rector at Bibury, Gloucestershire.

Three new painted windows have been added by Castell. The ancient Purbeck marble font, which had lost its columns and gained a painted surface of "granite," has been restored and polished by White, of London, at the cost of the architect. Mr. Francis, of Foot's Cray, did the works; and the cost has already exceeded 850*l.*; but much remains to be done in the removal of external stucco and brickwork of former days, and in coloured decoration of the interior. All this will doubtless follow. The rector, the Rev. C. Birch, deserves credit for his efforts.

Passing the other day along the railway mentioned, the country hereabout showed how marvellously the season is in advance; appletrees in full bloom, the pear blossom falling, and all nature flush with green. There is an interesting set of villages here to which the little river Cray gives name,—Crayford, Foot's Cray, North Cray, St. Paul's Cray, and St. Mary Cray. Foot's Cray gets the rest of its title from its Saxon owner, Godwin Fot, or Foot. The churches have interest enough for a day's loiter; and there are others close by. The visitor may go with Robert Bloomfield:—

> "O'er eastward uplands, gay or rude,
> Along to *Erith's* ivied spire,
> I start, with strength and hope renew'd,
> And cherish life's rekindling fire."

Then to Dartford; Darent, with its Norman church; and Swanscombe, with its Saxon one, both remarkable. Near Dartford, to go back a bit, may be seen some of the curious pits in the chalk called "Dane holes," similar to those at Little Thurrock, on the other side of the Thames, described in one of our earlier volumes. In fact, a refreshing and satisfying day may be spent hereabout without any great expenditure of money or strength.

THE MARKET VALUE OF AN ARCHITECT.*

IN these revolutionary days,—when the great purpose of a man's life seems to be, if not always to leave the world better than he found it, certainly to leave it upside down,—whilst the map of the earth is changing, the map of history changing, the map of society changing, the map of science changing, day by day, we cannot be surprised to see changing with the rest the not unimportant map of that division of labour by which human energy conducts its material and intellectual operations. Old agencies become effete: new take their places. Vocations which were important yesterday are superfluous to-day. Our old men, like our old muskets, are behind the age.

Now, amongst other honourable callings in art and science which have existed time out of mind, one of the most ancient,—in fact, we can follow its history by infallible records for 3,000 years,—is the vocation of an *architect.* And this vocation, I may fairly affirm, has all through these thirty centuries received from public opinion respectful recognition,—at least, in the great centres of intelligence for the time being. But within the last few years, in this metropolis of London, it really seems as if the proposition were being advanced that this recognition is a mistake,—that this architect, in a word, is a myth.

There are some who have put the matter in the form of a puzzle, desiring to know whether any one can inform them what an architect is. No one can, of course. Gentlemen of learning in that way, who consider themselves behind the scenes, applaud the cleverness of the hit. They have heard of the name, it is true. They have a vague idea of large pretensions attached to the name. They have heard a good deal lately of one Sir Charles Barry, an architect. With regard to St. Paul's Cathedral, also, in the City, they have heard of one Sir Christopher Wren, an architect, whose fame is supposed to be an honour to his country. They have travelled all over the world, one or another of them, and have looked at all the lions of the world. A very large proportion of these lions are certainly architectural lions; objects of much pride to the people; subjects of books, pictures, medals, histories, poems, researches innumerable; mighty and venerable works of marvellous human skill; by the Nile for instance, by the Ilissus, by the Tiber; by a hundred such old rivers to whose silent flow these works of the architect seem to give a voice, recalling the memories of ages otherwise lost. No doubt, all this is so; but yet, when the question is put in its plain, prosaic simplicity,—What is an architect?—gentlemen of education really cannot readily tell. There are even gentlemen in the House of Commons who have suggested the answer in a vague and pleasant way, that an architect is a nuisance; reminding one of the time when a similar puzzle was proposed,—What is a pound? There was the same quandary then. Some gentlemen had vague ideas about twenty shillings, but further than that the puzzle has never been unravelled to this day.

Let us take another instance. There exists a certain artistic society, of well-known name, professing to exercise great influence in architecture; indeed, dealing with church architecture largely, and that not only religiously, but technically and practically too. Its criticism is furnished by gentlemen of whom probably not three could make a passable drawing of the back leg of a chair. And yet before these empirics prominent architects humbly present their designs for judgment, thankfully accept faint praise, submissively endure dogmatical, almost discourteous rebuke.

Once more, when the Great Exhibition building of last year had to be planned, the Royal Commissioners, peremptorily rejecting the suggestion of having an architect, employed a sapper and miner. The Crystal Palace of 1851, none the less, was the work of a gentleman's gardener.

Now "the value of a thing is what it will bring." What, then, is the value of an architect? Not much, one might feel inclined to say; in point of fact, at the present day, nothing apparently;—nothing, at least, but romance,—nothing worth paying for in the eyes of Parliamentary critics, royal commissions, ecclesiological societies; and, so far as these dignified authorities are exponents of general opinion, nothing worth paying for in the eyes of the sovereign public. But hold: if it comes to a question of what is worth paying for,—a question of market value, whether of broadcloth or brains,—the public of this country are given to judging by their own instincts, altogether independently of dignified authorities. Walk through the city of London, therefore,—through Liverpool, Manchester, Glasgow, and many another busy hive of industry,—and take the effectual suffrage of the every-day works of every-day streets,—the property of men with whom market value is everything, and romance nothing. Do these employ sappers and miners and gentlemen's gardeners? If the House of Commons find it so hard to tell the market value of an architect, suppose they consult some shopkeeper in Cheapside? Perhaps he may be able to solve their other puzzle too, and tell them what is is a pound.

The value of a thing is what it will bring. I propose to embrace this proposition, as you see, in its hardest and most prosaic sense;—what is the *market value* of our profession? I propose to answer the question in the hardest and most prosaic manner,—by weighing the practitioner against *cash.* Rely upon it, John Bull's purse is not opened as it is to us to those who do him no service.

It is possible to ask,—and it would only depend upon a peculiar kind of moral courage how long one might persist in affecting not to know,—what is a *lawyer?* There is a certain grim pleasantry, however, which goes for an answer: it is perfectly intelligible: he who is his own lawyer has a fool for his client. Even affectation must ultimately yield to the strength of this simple reasoning, if the querist has had any experience of business at all. Now he who is his own architect,—what sort of person has *he* for his client? Perhaps

* By Professor Kerr. Read at the Architectural Exhibition on the 5th instant.

might furnish an answer here no less conclusive than the former.

What is a *soldier*, by the bye, in these days of Garibaldini and Polish scythemen? What might be the answer of the wits of Westminster and South Kensington, I cannot presume to say; but a plain man of business might venture to suggest that he is still an expert, trained to do with every advantage that which your Garabaldini and scythemen, for want of training, can only accomplish under much disadvantage. And in these days of capitalist builders, ecclesiological amateurs, sappers and miners, and gentlemen's gardeners, what, in like manner, is an architect? A trained expert none the less, who by reason of his training, and in exact degree according to the measure of his training, performs with facility and honour a difficult and delicate intellectual task which these Garibaldini and scythemen of the arts, for want of training, only bring dishonour on their age by pretending to attempt; dishonour even in the eyes of those who put them forward—whose want of knowledge is on a par with their own want of skill,—for, after all, who amongst the very men who cannot tell what is an architect will have the hardihood to suggest the creation of one worthy the name out of a sapper and miner or a gentleman's gardener?

I do not forget that in former lectures in this very place I have traced the history of two of the most remarkable architects of all time, with whom architecture was not apparently the subject of youthful study. Michelangelo was a sculptor. Wren was a mechanician. It is true. Therefore, the argument has run, why not make another Wren out of "a clever young officer of engineers?" another Buonarotti out of a distinguished horticulturist? Well, little Sir Christopher was a gentleman, and member for Windsor; we can fancy him speaking very civilly to the sapper and miner; but, in the name of all rugged memories! what would *he* say to the gentleman's gardener who struck at the Pope with a scaffold board? Again, the argument runs on, in the Middle Ages the architects of marvellous works were untrained priests; why not therefore out of a clergyman at large make a useful jurisconsult of the Ecclesiological Society? The inference here, I reply, is even more hollow than the former. Were the priest architects of the Middle Ages untrained? Certainly not: the clerical experts of that time, in all departments alike, were doubtless not only carefully taught, but carefully selected both before and after. Nor was Wren untrained; after the manner of his time it is unquestionable that he had studied anxiously for years. As for the magnificent intellect of Michelangelo, if there be anything that we can suppose impossible with it for lack of training, it would be architectural design; and more, if there be anything in which even training proved inadequate to constitute him so much a wonder of the world as in all else, critics agree that it is in this art alone that he is scarce himself.

An architect, then, is a public practitioner who, by means of a certain training which is peculiar to him (based, of course, upon a certain aptitude which is not every one's gift), is qualified to administer building operations with peculiar skill. And the value of such a public servant is to be judged of by two facts at the outset which are to be taken for granted. First, it is the fact that within the last fifty years the numbers of the profession, at first in London and the great towns, but latterly throughout the country at large, have been steadily increasing; and this in an advancing ratio, which at the present moment is almost incredible. This is proof which statisticians would pronounce indisputable that the English public, appreciating very highly the character of the supply, are thus induced in a corresponding degree to augment the demand. Secondly, it is the fact that while the profession of architects has been so vastly increasing in numbers, the position of its members socially, educationally, and pecuniarily, has not only continued satisfactory, but has materially advanced. This is good evidence, again, that on the whole the public pay the architect well: there is even reason to believe that the public at this moment are perfectly prepared to pay him better. We are, therefore, already entitled to affirm that the market value of the architect is a matter upon which there need be no feeling of discouragement: if we have detractors, they are certainly not the English public at large.

In proceeding, now, to examine more in detail the functions of the architect as a public servant, I need scarcely remark that in every-day practice he frequently diverges into business which is not strictly architectural; it being always the rule that, as every vocation is conterminous with, or, as we say, abuts upon, a variety of other vocations which may be said to surround it, there are in every direction recognized combinations of vocation effected upon border ground. And thus there constantly come before certain classes of architects a mass of questions of survey, valuation, purchase and sale, legal and other controversies of many kinds, in which, as adviser, negotiator, skilled witness, advocate, or arbitrator, the experienced architect is able to render to the public such service as no one else could pretend to offer. But suppose we set aside all this as surveyor's work. That it is most useful work we must never forget; and the fact that it is handsomely paid for is no doubt in many cases an important element in the pecuniary success of the profession; but, nevertheless, we need not shrink from surrendering this ground in our present inquiry, so as to confine our attention to what may be called the more peculiar and exclusive province of the traditional architect. In other words, divest the question of all this useful, profitable, but not purely architectural skill, and there remain these three great departments of our craft pure and simple, each one essential to the character of a perfect architect, and each one bearing a market value; namely,—

Building contrivance, or the contrivance of plan;
Building science, or the science of construction;
Building art, or the Fine-art Architecture.

The master architect is master of all these, and he *alone* is master of them all. I will go even further, and assert that he alone is master of *any* of them, as mastery should be.

The raw material for all this exercise of intellectual endeavour is the builder. He supplies the bricks and mortar, the timber and deals, the journeyman and the labourer, the trowel and the hammer. Occasionally he is bold enough to profess to supply the architecture too: he is a practical man, and an ounce of practice is worth a pound of theory: he has had great experience, from the bench upwards, and could take off his coat and turn to at his trade yet if occasion required: he keeps his own draughtsmen, perhaps, and can turn out a drawing as well as any architect in London; and so on. This gentleman is the raw material. Give him an architect, and he owns it frankly:—"I always prefer to work under an architect, if it is only a five-pound job; because then I know it is *right;* I have no trouble and no responsibility. The only thing that puzzles me," he will say confidentially to the architect, "is this; how, in the name of wonder you can do so much work for so little pay: what's five per cent.?" He *may* go on to hint that the five ought to be made up to ten; but the market value of an architect already depends upon the stolidity with which he listens to this suggestion without having the faintest idea of what it means.

Look now at what I call building contrivance. I mean the skilful adjustment of everything to the end of convenience in respect of the arrangements of plan, the choice of appliances, and the ordinary construction. We may safely say that if the architect be not able to profit his client in this matter alone to the full extent of his commission he is not worthy of the name. I might even assert that, as a rule, the difference of palpable value between, for instance, a West-end dwelling-house carefully compacted by an experienced architect, and the equivalent pitchforked together by any one of a hundred builders who would cheerfully dispense with all professional aid, is, in respect of mere contrivance, not simply five per cent., but five times five, and without the necessity for a single shilling of additional outlay on this account.

But, in order that the architect may really be of service to the public in this important respect, it is obviously essential that he should study with attention the subject of plan. Nothing can be a more fatal error as regards the value of the architect than a notion which pervades the mind of many of our students to the effect that artistic design is the one thing needful. Let it be distinctly understood that an Englishman is very easily overdosed with this artistic design. In dwelling-houses, for example, English gentlemen not of the Hebrew persuasion will be found to refuse anything beyond a very modest minimum of it. The dislike of obtrusiveness is, in fact, so decided amongst our better classes, that it frequently leads to an archaic poverty of design much to be deplored. But convenience of disposition is quite another thing. In this there is no limit whatever to the exercise of skill; and the high esteem in which this kind of architectural merit is held may, without hesitation, be instanced by an allusion to certain gentlemen well known who have built up thus, with little pretension, if any, to either science or art, a reputation which secures without an effort the most liberal returns in the profession. In a word, the high market value of such practitioners is one of the best possible illustrations of the degree to which the item of building contrivance is practically appreciated by the public. As another notable instance, there are not wanting cases in ecclesiastical practice in which a valuable connexion is kept up on the strength of similar merits of plan; where not only an unpretentious, but even an obsolete manner is accepted in respect of style, for the sake of sound experienced common-sense in general contrivance.

Take, now, the second department of the architect's province, namely,—building science or construction. It is in respect of this that the clever young officer of engineers, and the gentleman experienced in green-houses, were put over the heads of the entire architectural profession. It is in respect of this that the civil engineers as a body are supposed to affect contempt for the architects as a body, although I question, for my own part, whether they really do. In a word, it cannot be denied that particular attention is at the present moment demanded to the study of scientific construction, as the best means by which the architect can recover any prestige which of late years he may think he has lost.

However, I have none the less emphatically to point out the fact that if for a time the architect lags behind the pace of other professors of science, it is only in respect of such questions as apply to magnitude of scale and novelty of principle. In his ordinary beaten track he is still unrivalled. Neither the practical builder, with his empirical instinct, nor the engineer, with his mathematical elaboration, can either dispossess the well-trained architect of his common constructive ground, or even aid him where he may be at a loss.

It may be again affirmed, in the formula already adopted, that if the architect does not benefit his client pecuniarily in this respect alone to the full extent of his commission, and a good deal more, he is not an apt and well-trained man. His market value, therefore, is again clearly before us: the man of business, in building a residence for himself, or a church or school for his neighbourhood, or a warehouse or factory for his trade, not only feels that the ingenious and practised contrivance of all arrangements, at a cost of 5 per cent., is a thing that *pays;* but perceives also that the science which is brought to bear upon the construction is a second thing that *pays*, even if it cost another 5 per cent., which it does not. For, argues common sense, how far would 5 per cent. go in waste of material and labour? How far would 5 per cent. go in remedying inconvenience? How far in repairing structural weakness? What is 5 per cent. in business? A bagatelle: there is many a warehouse in London where 5 per cent. pays for little more than wrapping a thing up in brown paper.

To relieve for a moment the tedium of sustained argument, let me relate an anecdote. Some years ago a party of gentlemen, chiefly architects and builders, were invited to dine together. The architects arrived in public cabs; the builders in their private broughams. The contrast was pointed out, and the explanation asked for. "It is the difference," was the reply, "between 5 per cent. and 15."

By way of mentioning in passing a matter which must not be forgotten, let me here remark how important a point in the practical value of an architect to his client is the matter of a correct calculation of cost. It is not too much to say, that in a certain sense, all other qualities of excellence are vain unless this truly British principle be fairly met. An architect's estimate has been allowed to become a byword. This ought not to be. I believe in the case of every one of our profession, whose career has been signally fortunate in public works, such as Soane and Smirke, this one merit has been the foundation of success. An Englishman, in a word, will always pay liberally for a reliable estimate; and he will always complain bitterly of any disappointment in this respect, refusing to take any excuse whatever.

We may now turn to our third department—Building-Art. Here the accomplished architect is supremely master of the situation. This is the art of the beautiful in building; the long celebrated and right royally cherished fine-art architecture; queen amongst the arts; enthroned from the very dawn of civilization; to whose majesty the rest are handmaids; beside whose monuments all through the ages the common works of man's genius are but toys, and man himself a pigmy,—

working, one might imagine, under the behest of some Titanic agency unseen,—leaving in tremendous ruins scattered across the globe, that which is a puzzle really, hard to be solved by thoughtful men.

The abstract origin of this fine art is no more than this. Look at it as a first principle in all intellectual work, that grace and beauty must assuredly find a footing somewhere. Owen and Huxley may theorize for ever about the microscopic anatomy of monkeys and men; but if the real difference between the lower intelligence and the higher intellect is to be actually understood, we must, I think, start from this one point, and this alone. No bulk of brain, no conformation of skull, can ever cause a gorilla to see the beauty of the brightest flower of the woods; and no degradation of species, short of occasional disease, can ever deprive a *man*—be he but a Hottentot—of that relation to the multifarious beauty of the universe around him out of which come all his best enjoyments and all his aptitudes for mental development. It is a first principle, I therefore repeat, in the operation of human intellect in all works of design, that it shall combine with the useful the graceful; and in building, as may safely be said, grace of every kind, from playful prettiness to solemn majesty, seems to force itself upon the attention of the intellectual designer more perhaps than in any other sphere of the kind whatever. Hence, then, architecture the fine art. It began with the beginning: it has never wearied in its pleasant way from that beginning till now: it will never weary from now to the end. Five thousand years ago the savage decked out his wigwam as daintily as a savage could; and five thousand years to come, in the last and dreamiest age of the perfectibility of the species,—when the world is too refined to be worth living in any longer,—when humanity, having nothing further for which to keep awake, can only yawn and snuff itself out, the last attenuated lord of the creation will sink to rest in some pleasant chamber of design, on whose placid features the Battle of the Styles has imprinted neither a frown nor a scar.

But, at all events, here we are in the very feverheat of the world's progress; about equally removed, as perhaps everybody will acknowledge, from savagery on the one hand and perfection on the other; and it is not too much to say that these are the times of all times, and England the land of all lands, in which it would be voted a perfect anomaly for building to go without fair garments. That in this very age, and in this very country, there should be found people sufficiently perverse to raise a cry for the contrary, is at the same time to be expected. The curious mental law here exemplified has frequently been under discussion before now: and it is well understood that when any principle is most fully in the ascendant, then is the time for some one most flatly to deny it. So that the present universal popularity of architectural art is a thing not at all at variance with the enunciation of the riddle—what is an architect?

In this last of our three forms of the question of money value, it is certainly most remarkable how decidedly the general public of the present day signify their cordial appreciation of the architect's services. The demand for what is called a "neat elevation" governs every little shop-front in our back streets. Our very workhouses are notoriously made matter of artistic effect. Even police-courts and prisons are tricked out with their modicum of ornament, lest discipline itself should be too dismal to bear, or the felonious part of the public have reason to complain that we do not regard them as men and brethren.

It would be wasting your time to enlarge upon the market value of our agency in fine art. The historical monuments, of which there is not a country of the civilized world but possesses its share; the great public buildings of the day laboriously rising up in every centre of population; the temples of divine worship, of whatever faith, from primeval antiquity to the passing hour; the cenotaph of sorrow, and the tower of triumph; the gigantic theatre, and the pettiest restaurant; the palace of imperial receptions, and the wayside cottage of modest retirement,—all these are but the universal testimony of our race to the purchase of architectural art.

I ought to have included with these (our theatres and palaces, churches and cottages) the noble bridge in its fifty forms, the grand quay-wall, the mighty breakwater, the lighthouse of many welcomes; but you all know I cannot. Art has not yet reached these; the works of our engineers,—marvels of science,—have not yet bowed to the more fascinating yoke. But presently they will—inevitably they must; and we may, therefore, be satisfied meanwhile to wait. Still here lies the germ of a future conflict. That our engineers, as a profession, will adopt the practice of artistic design, I hold to be impossible; the elementary organization of the craft prevents it; the class of mind involved is not the artistic class; but whether the architects as a profession will embrace the practice of the more ponderous kind of construction, is a question of doubt. I hope they will; but to be done effectually it must be done by numbers. In a word, if our rising architects would at present turn their attention earnestly to the study of the building works of the engineer, I think the whole of these might, before long, be conquered to the authority of Art. Can anything be conceived more grandly suitable for architectural design than our Thames bridges? Why should they be so inevitably helplessly barren of endeavour after elegance or ornament? Look at the nakedness again of our lighthouses: why cannot the architect weave a little of the beautiful into their naturally graceful forms? To those who profess so much now-a-days to seek for novelty of style, let me say a word on this. For novelty of style, the best of all foundations is novelty of purpose: suppose we try the architectural hand on a few bridges, lighthouses, and piers for an experiment, and see what will come of the effort. But let this be borne in mind, there must be no sham and piecrust; no adaptation of mere cast-off clothes; no designing in such and such a style; no attempting to follow so and so's manner. At all events, what more prominently concerns us in this suggestion at the present moment may be put thus:—so well and widely acknowledged is the market value of the architect in respect of his charming art-work, that if he will but offer to apply it to engineering, I undertake to say the universal voice of the country (except, perhaps, the voice of the engineer) will applaud and encourage on every hand.

I now come to the least pleasurable portion of my inquiry, namely—to ask how it happens that at the present moment persons of education and good taste are found to come forward and assert roundly that the architect is of no market value at all? I must answer the question briefly, and you will excuse me, therefore, if I speak to the point. I blame the archæologists. It may be laid down as a rule that so long as the trained expert keeps to *business*, the untrained amateur will be his respectful admirer; but that directly he turns his specialty into a popular recreation, hundreds of idle intellects cluster round him and contest with him the possession of his very skill. As mere illustrations of this question of policy, note how carefully the medical and legal professions keep their science out of what is called the "popular" form. Ask military men what they think of the present fashion of soldiering for amusement. Look even at our own shrewd half-brothers, the engineers, and see how they fight shy of noble patronage and public debating clubs. I think it has been a most mistaken policy in our Mediæval architects to encourage as they have done the empirical and superficial sciolism of fashionable antiquarianism. The old *dilettanti* had their faults; but they were men of polish; and if their sentiments were somewhat affected, they were at least both graceful and harmless: but these new-fangled *savans*, — mild country curates, Roman Catholic priests the reverse of mild, rubbers of brasses, collectors of china, dealers in curiosities, pre-Raffaellite house-painters, ecclesiastical milliners, glaziers, and candlestick makers,—the more sincere their admiration the more hurtful their help. Fifty years ago architecture was, at the worst, the plaything of Egyptian explorers and Greek scholars; now it is the prey of a host of blackbeetles from Wardour-street.

The *enmity of amateurs* (I use the expression advisedly) is the basis of all the opposition which the architect of the present day has to contend with. Amateurs are always a professional encumbrance; and if a profession make pets of them, they become pests. In precise proportion to their earnestness, so are they pernicious. Of necessity shallow in their knowledge, they are of necessity self-satisfied in their opinions; and the more it is necessary to conceal their ignorance, the more they have recourse to arrogance. As regards architecture, in whatever branch, I contend that we have no need for any amateur element whatever; and I unhesitatingly assert that when we encourage what is called the praiseworthy interest taken by the educated public in our beloved art, and so on, in the expectation that the market value of our craft is being raised thereby, we are really establishing a partnership with any one who has an unfurnished head to let, by which we both depress the standard of criticism and lower the market value of skill. He who respects himself, the world respects him: he who underrates himself will find himself accepted at his own valuation.

I have thus set forth for your consideration the way in which I think the shrewd instincts of the English people are to be confidently relied upon by the architectural profession as appreciative of the value of professional services. I have asserted that the present affectation of contempt for our profession is only the ephemeral arrogance of petted archæologists and amateurs, in direct opposition to the views of the public at large. I have also endeavoured to explain that in order to uphold our pretensions to public usefulness we must, of course, maintain carefully, and indeed elevate still more, our standard of knowledge. I have ventured to direct attention especially to science as a field of profitable study and profitable practice. I have only to urge further that, for the sake of our market value, if no more, we ought to contrive to keep our æsthetical disputes to ourselves, and to avoid seeking help from the Philistines,—to agree to differ in taste without surrendering brotherhood,—and above all, to come to a determined understanding to allow no more architectural amateurs,—in fact, to tell such people plainly to mind their own business,—as they would very soon tell us if our positions were reversed.

As a last word I have this to say. There are tricks in every trade; but I know of no profession of men in England who, as a rule, more honestly and anxiously perform their duty—doing a large amount of work for very modest payment—than the architects; and I take the opportunity of winding up with a practical suggestion that, although we do not complain, it would be a well-merited compliment if the public would take the first opportunity of augmenting the money standard of our market value above the five per cent.; in fact, in plain English, to signify their sense of our high merits by raising our wages.

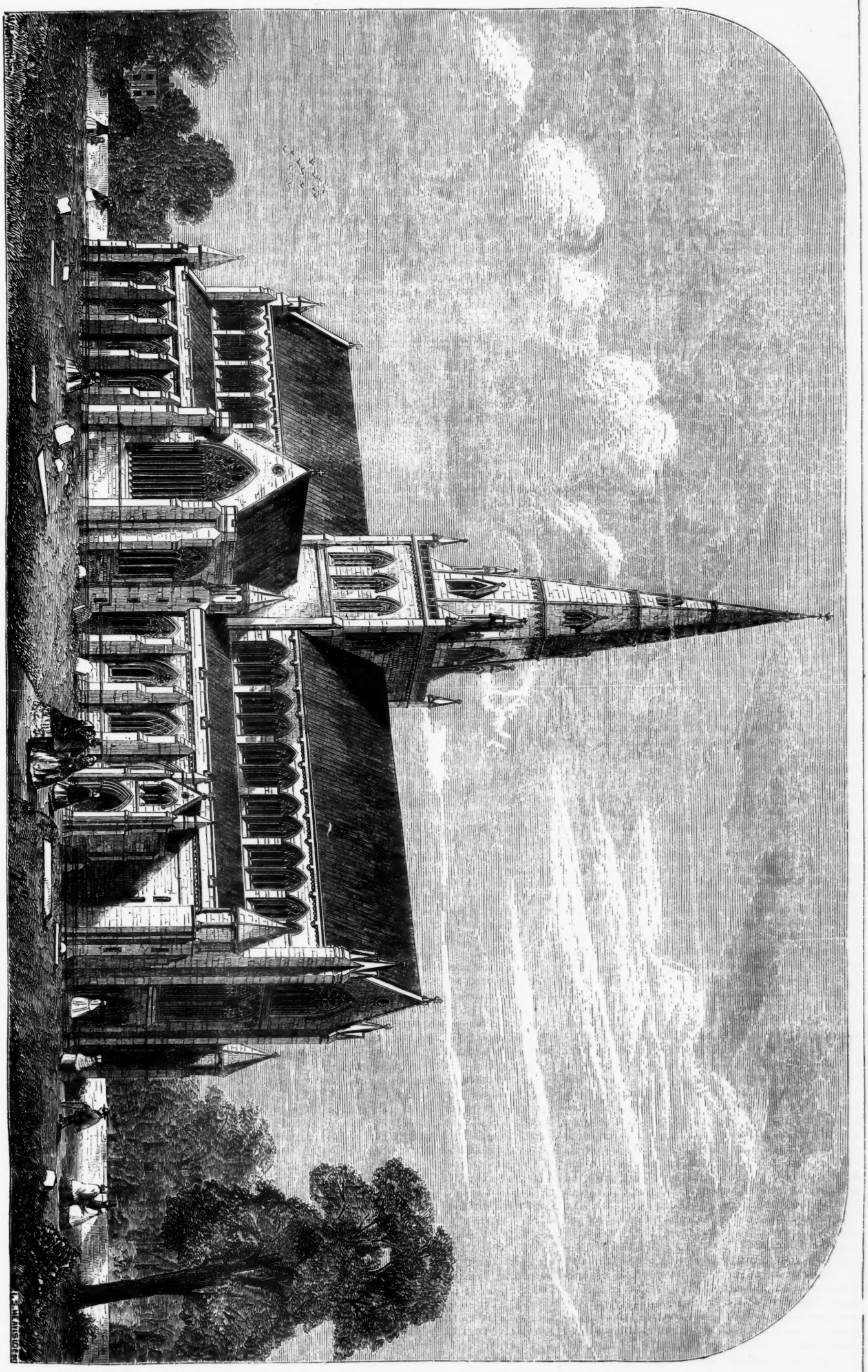
ARCHITECTURAL COPYRIGHT.

A CORRESPONDENT writes,—"Some time ago I designed and carried out the erection of a large and expensive bay window to a mansion. Can I protect my right of design so far as to have a claim in case that design is exactly repeated in another part of the same building? And if I can, what are the requisite steps to be taken?"

The answer, we fear, must be that he cannot obtain the protection he desires. It was proposed in a recent Copyright Bill to give architects protection for designs *on paper* (withdrawing it when the design was executed), but such was the apathy of the profession on the subject that even this was omitted in the protective Act which was passed.

A HINT FOR THE EXHIBITION OF NAVAL MODELS.

In the House of Commons, Lord R. Montagu has asked the Secretary of the Admiralty whether the statement was correct which had been made by Mr. Scott Russell, in a paper read at a meeting of the Society of Naval Architects, concerning the collection of models at Somerset House; viz., "That it had been thrust into a cellar—shut up in the dark—and was now effectually kept out of sight." In reply, Lord C. Paget said that "the models referred to were not so well placed at Somerset House as could be desired, owing to the want of suitable accommodation in the building; but at the same time, the statement of Mr. Scott Russell that they were thrust into a cellar was a great exaggeration." There can be no doubt, however, that those models are very ill placed at present, and are comparatively useless to the student of naval architecture, or to those who are interested in observing the progress of ship-building. Many of these models are of great beauty and of delicate and curious workmanship. There are other models of ships which are scattered here and there, in certain of the Government offices, in the Royal and some other collections, and in museums. These being odd and isolated examples have no great value; but if the whole of these illustrations of naval architecture, together with those pictures and prints which exist of our ancient and modern vessels, from the British corracle and Roman and Danish galleys, to the *Great Eastern* and the iron-clad *Warrior*, there might be formed a most instructive and interesting exhibition. Room could probably be found for such a purpose in the South Kensington Museum.



PAISLEY ABBEY, SCOTLAND.—*In course of Restoration under the Direction of Mr. Salmon.*

PAISLEY ABBEY, SCOTLAND.

LIKE most of the other more important ecclesiastical edifices of Scotland, Paisley Abbey was founded about the middle of the twelfth century. The event which more immediately suggested its erection was the death of the pious David I., who had himself been the founder of many churches in every part of the kingdom. The founder of the abbey was Walter, the first Steward of Scotland, who, having received as an exile a generous welcome from David, determined to perpetuate his sense of the king's kindness by erecting to his memory the Monastery of Paisley. The mason or architect employed was John Morrow, who must have been a celebrity of the period, since we find from the following sensible account of himself that Paisley was not the only town which he adorned with his skill:—

"John Morrow sum tym callyt was I
And born in Parysse certainly,
And had in keping al mason werk
Of Santandrays, ye hye kirk
Of Glasgu, Melros, and Paslay,
Of Nyddysdall and of Galway.
I pray to God and Mary baith
And sweet St. John kep this holy kirk fra skaith."

The above inscription is copied from a tablet in the transept door of the Abbey of Melrose, which, as we see, was also one, and not the least important, of Morrow's productions.

The style of Paisley Abbey is Early English, though there are not wanting round arches in one of the two southern entrances.

In the edifice as it now exists there is very little to indicate which portion of the abbey was first erected, though the apparent age and character of some "built-up-arches" at the south-west angle of the monastic buildings might point out this as the locality of the oldest masonry still standing.

The entire completion of the buildings extended over more than one century. Indeed, the edifice was not constituted an abbey till 1219. Previous to that date it only ranked as a monastery. It is highly probable that the abbey reached its state of greatest perfection about the middle of the fourteenth century. At that time the tower and spire had been finished, while chancel, choir, transept, chapel, cloister, and monastery were grouped around in all their completeness.

How long the abbey remained in this finished condition does not exactly appear, though in all likelihood more than a century passed before any decided change occurred. About that period, however, viz., towards the beginning of the sixteenth century, the abbey, by the fall of the tower and spire, was visited by a disaster of the most serious kind. Of the cause of this calamity no authentic record has been left, though the tradition is probably correct which assigns it to lightning. The result of this misfortune was the entire destruction of the choir, chancel, and northern arm of the transept, while the nave was also so seriously damaged that the hasty erection of an ungainly wall or gable at its intersection with the transept alone saved the whole fabric from destruction. The repair of this crushing disaster never seems to have been seriously attempted: at least, in 1860, when Mr. Salmon first reported to the heritors, the portions of the abbey which had suffered from the fall bore all the marks of confirmed and ancient ruin. As for the architecture of the edifice, like most buildings of the same period, its merits are unequal. The west front is very imposing, and furnishes one of the best examples of the style which the northern division of the island can boast. With all this, however, it perhaps wants that living grace in its detail and outline which imparts in all cases so great a charm. The northern gable or elevation of the transept exhibits, on the other hand, great beauty in its detail; and now that its entire outline has been restored, and the tracery of its principal windows completed, presents a general aspect which few buildings of the period surpass. The restorations, so far as Mr. Salmon has yet been empowered to carry them out, consist of the re-erection of the northern porch, the completion so far of the northern wing of the transept, and some of the angle turrets, as well as a general renovation of bases, strings, and other mouldings. Besides these operations, however, at the architect's suggestion, the soil which the accumulation of centuries had heaped round the walls, to the height in some cases of nearly 10 feet, has been entirely removed. Some ungainly erections, in the shape of walls and houses, which shut up the abbey on the west and north, have also been taken down; producing, with the removal of the soil, a result far surpassing the highest expectations of the promoters of the undertaking.

Within, as on the outside, the burying of the dead had raised the level of the floors 3 feet or 4 feet above the bases of walls and piers. The whole of this accumulation of poisonous soil has now been taken out; and for the first time for three or four centuries the nave is again exhibited in all the imposing dignity of its ancient proportions. As this portion of the abbey is still used for the parish church, among its other renovations it has been supplied with a new pulpit, and new seating arranged to accommodate nearly 1,110 sitters. In the mean time, and only from the want of funds, the further work of restoration is delayed. This want, we trust, will not be of long duration; and our Paisley friends will excuse us for reminding them that the old Scotch proverb "a begun turn's half ended," is only true when they who begin do not stop. The preservation and restoration of these noble witnesses of our ancient faith and progress are too important a consideration to be kept in abeyance by any obstacle which skill and energy may overcome.

CHARING CROSS BRIDGE.

INSTITUTION OF CIVIL ENGINEERS.

At the meeting on April 28th, the paper read was, on "The Charing-cross Bridge," by Mr. Harrison Hayter.

It was stated that this bridge consisted of nine spans,—six of 154 feet and three of 100 feet,—the centre opening of the Hungerford Supension-bridge having been divided into four spans each of 154 feet, that on the Surrey side into two spans also of 154 feet each, and the opening on the Middlesex side into three spans each of 100 feet—the superstructure over the latter being fan-shaped. The width of the river, at the site of the bridge, was 1,350 feet. The greatest depth of water between the two brick piers of the original bridge was 13 feet below low-water spring tides, and the average depth was about 9 feet; the rise of spring tides being 17½ feet. The level of the rails was 31 feet above Trinity high-water mark, and there was a clear minimum headway under the bridge of 25 feet above the same datum.

The superstructure was carried by cylinders sunk into the bed of the river, and by the piers and abutments of the suspension-bridge, the abutments having been considerably lengthened. The cylinders, excepting at the fan end, were 14 feet diameter below the surface of the ground, and 10 feet diameter above, the junction between the two sizes being effected by a conical length. There were four piers formed of these cylinders, each consisting of two cylinders, 49 feet 4 inches apart from centre to centre. They were of cast iron, 1⅛ inch in thickness throughout, and the circumference was divided into segments, with interior flanges round all the edges, through which the segments were bolted together; and a horizontal interior rib was also cast in the middle of each segment. There were thus continuous vertical lines of ribs, securing a strong columnar arrangement.

The strata through which the cylinders were sunk consisted of mud and gravel, of varying thicknesses, overlying the London clay. The sinking was effected by excavating the material from the inside—at first by divers, but after the London clay was reached and the water was pumped out, in the ordinary way—and by weighting the cylinders, to an average load of 150 tons each. These cylinders were sunk to depths of 52 feet, 62 feet, and in one case to 72 feet, below Trinity high-water mark. They were filled with Portland cement concrete up to where the conical length commenced, and above with brickwork, set in Portland cement mortar, to the underside of the granite bearing blocks, which were 2 feet 6 inches in thickness, and projected 1 inch above the top of the cylinders, in order that the weight might not come on the upper edge of the iron-work. With a view of testing the strength of the foundations, the two cylinders in the pier nearest to the Surrey side, after being completed up to the level of high water, and filled with concrete and brickwork, were each weighted with 700 tons, being about equal to the greatest load they could possibly have to sustain, supposing the four lines of rails on the bridge to be loaded with locomotive engines. This caused the cylinders to sink permanently 4 inches. To bring the other cylinders to a bearing, so as to prevent any settlement after the completion of the bridge, from the weight of the permanent and moving loads, they were each weighted with 450 tons, when it was found that they permanently sank, on an average, 3 inches each. Each pair of cylinders forming a pier was connected together transversely by a wrought-iron box girder, 4 feet deep, which also served as a cross-girder for supporting the roadway. Assuming the four lines of way on the bridge to be loaded with locomotive engines, the pressure on the base of the cylinders would amount to 8 tons per square foot, and on the brickwork at the top of the cone to about 9 tons per square foot.

The superstructure of each of the 154 feet openings consisted of two main girders, to the under-side of which were suspended cross-girders, for carrying the roadway platform. These cross-girders extended beyond the main girders, and formed a series of cantilevers on the outer sides, for supporting two footpaths, each 7 feet wide in the clear. The main girders were of wrought-iron, and were not continuous, but extended only over one opening. Each girder had to support, inclusive of its own weight, a maximum distributed load of 750 tons. The extreme depth of these girders was 14 feet, and the depth between the centres of gravity of the top and bottom members was 12 feet 9 inches. The sides of the girders between the bearings were divided into fourteen equal parts by a pair of vertical bars, connected to the top and bottom by pins of puddled steel, 7 inches diameter at the ends of the girder, decreasing to 5 inches diameter at the centre; and each division contained a double set of two diagonals crossing each other. The top and the bottom of these girders were of boiler-plate, and consisted of horizontal tables 4 feet and 3 feet wide respectively, and of four vertical ribs, the two outer rows being 24 inches deep, and the two inner rows 21 inches deep. The aggregate thickness of the plates in the horizontal table of the top in the centre of the girder was 3⅛ inches, and in the bottom 3$\frac{13}{16}$ inches, without the angle-irons, and of 4½ inches and 4$\frac{13}{16}$ inches respectively with the angle-irons, but exclusive of the angle-iron covers. It was arranged that, with the greatest load, the maximum strains should not exceed 4 tons per square inch in compression, and 5 tons per square inch in extension. All the rivet-holes were drilled by machines capable of drilling several holes at one time. This plan was, under the circumstances, less costly than punching, besides which a great saving was effected in putting the work together. The diagonals acting as ties were of Howard's rolled suspension links, each separate tie being composed of two or three links, as required, riveted together. The diagonals acting as struts were each in one solid forging, and were united together in pairs by zigzag bracing of wrought-iron. In the centre of the girder, where the diagonals acted as both struts and ties, the pairs were united together in the two central spaces by the zigzag work. The dimensions of the struts varied from 12 inches by 3 inches at the ends to 6 inches by 2½ inches in the middle, and of the ties from 12 inches by 2½ inches at the ends to 6 inches by 2 inches in the middle. The ends of the girders over the piers were boxed in, with plates ⅜ inch thick, stiffened by angle and T irons. Over the cylinders the girders rested on sheet-lead, laid upon the granite blocks. On the brick piers and the Surrey abutment they rested upon roller bed-plates. The girders were put together in place on a staging, the upper and lower platforms of which were accurately adjusted to the proper camber. The whole of the plates were drilled, and the struts and ties were completed, before being sent to the works. The weight of each main girder was 190 tons. One of the main girders was tested when in its place with a distributed load of 400 tons, when the greatest deflection observed was 1$\frac{5}{16}$ inch, and the permanent deflection after the load was removed was ¼ inch.

The cross girders of the 154-feet openings were of wrought-iron, and were generally similar in character to the main girders, from which they were suspended, at intervals of 11 feet apart, from centre to centre. They were 4 feet deep in the middle, and 2 feet 1½ inch deep where the cantilevers were united to them outside the main girders. The top and bottom consisted of two plates, 18 inches wide by ⅜ inch thick, the sides being of lattice bars united to the top and bottom by angle-irons. The cantilevers decreased from 2 feet 1½ inch deep at their junction with the cross girders to 1 foot 2 inches deep at their extremities. Each cross girder, including the two cantilevers, weighed 9 tons. When two of these cross girders, without the cantilevers, were tested with a load of 140 tons, equivalent to 70 tons on each girder, the maximum deflection in the centre was 1 inch, and the permanent deflection when the load was removed was ¼ inch.

The superstructure of the three 100-feet openings of the fan end was supported by the brick pier and abutment on the Middlesex side of the suspension bridge, and intermediate to these by two rows of seven and of nine cast-iron cylinders respectively. These cylinders were 10 feet diameter below the ground level, the outer ones being 8 feet diameter, and the inner ones 6 feet diameter above that level. They were sunk to depths averaging 40 feet below Trinity high-water mark, and were filled with Portland cement concrete to about 5 feet above that level; but it was not considered necessary to fill in the remaining portion of these cylinders. On account of the great width of the fan end, which increased from 49 feet 4 inches at the brick pier to 168 feet at the abutment, the plan of supporting the roadway on cross girders, suspended from outside main girders, was inadmissible; and as it was not desirable to introduce intermediate main girders, projecting above the line of rails, the roadway was carried by interior plate girders, laid at right angles to the piers and abutment, and by the outside main girders, which were laid at the angle of inclination of the fan. The outside main girders were of the same depth, and were generally of the same character, although lighter in all the parts, and were fixed at the same level, as the girders of the 154 feet openings. The interior plate girders were of the ordinary construction, 5 feet deep, or one-twentieth of the span, and weighed 26 tons each. The triangular spaces between the outside main girders and the outer interior plate girders were filled in with cross girders, terminated by cantilevers, projecting beyond the face girders, and similar to those outside the main girders of the 154 feet openings.

The roadway platform over the 150 feet openings consisted of planking 4 inches thick, spiked to longitudinal timbers, 15 inches by 15 inches, placed underneath the rails, and bolted to the cross girders. Over the fan end, the platform consisted of planking 6 inches thick, secured to the girders. The footpath platforms were of planking 6 inches thick.

The first cylinder of the Charing-cross bridge was pitched on the 6th of June, 1860, and as the bridge was now on the eve of completion, its construction would thus extend over a period of about three years. The weight of wrought-iron in the bridge, including the steel pins, was 4,950 tons, and of cast-iron, 1,950 tons. The total cost, including the abutments, would be 180,000*l.*, or 1*l.* 15s. per square foot, and 131*l.* per lineal foot. The cylinders of the 154 feet openings cost complete 20*l.* per lineal foot; the outer cylinders of the piers of the fan end cost about 12*l.*, and the inner ones about 10*l.* per lineal foot. The bridge was designed by Mr. Hawkshaw (President Inst. C.E.), the engineer to the Charing-cross Railway Company, and was carried out under his immediate supervision, Mr. John H. Stanton being the resident engineer. Mr. George Wythes was the contractor for the construction of the railway, but this bridge was sublet to Messrs. Cochrane & Co., whose representative on the works was Mr. Joseph Phillips.

THE IMPOLITIC TAX ON PUBLIC CHARITIES.

WE object strongly to any proposal to levy a tax on the property of our charitable institutions. In the metropolis—and the case is similar throughout the country—many most valuable establishments, although they are possessed of funded and other property, have a struggle for their existence year after year. In many instances it is absolutely necessary for hospitals and similar institutions to have funded or other property to fall back upon, particularly when times are bad, and when, by the increase of sickness or calls, there may be more than the average demand for assistance. Take for example the Islington Fever Hospital, an institution of the utmost value. In the year ending December 31st, 1861, the outlay, but for the sale of 750*l.* of stock, Reduced Three per Cent. Annuities, which produced 691*l.* 17s. 6d., would have been considerably over the income. On the 31st of December, 1860, the balance in the hands of the treasurer was only 4*l.* 10s. 4d. During the year 1861, the whole amount of donations and subscriptions was 1,047*l.* 10s. 3d.; from unions and parishes who had sent patients, 417*l.* 10s. 6d.; from non-subscribers and others, on account of domestic servants, 144*l.* 15s.; dividends on Government Stock, 67*l.* 3s. 6d.; rent on account of Coldbath-fields estate; some other items,—amongst them a donation towards providing a carriage for the exclusive use of fever patients,—and the six hundred and odd pounds for the Government Stock above mentioned, made a sum of 2,669*l.* 17s. 11d. The year's expenses were 2,275*l.* 18s. 1d.,; leaving in the hands of the treasurer and secretary 398*l.* 19s. 10d.; so that, but for the sale of stock, there would have been a deficiency in this year of nearly 300*l.* It is true that, as regards this hospital, the amount of the proposed tax would not be large; still, under the conditions, this could be but ill spared; and in other cases the charge would be considerable. As regards St. Bartholomew's Hospital, for instance, the income of which is stated to be 36,000*l.*, the tax of 7d. in the pound on this would amount to 1,050*l.* per annum, a sum which, making the yearly cost of a patient 25*l.*, would serve for the support of forty-two sufferers; but, in the way that hospitals are managed, this sum would be of advantage to more than five or six times that number.

St. Luke's Hospital, for the treatment of insanity, requires additional support rather than to be still further crippled, as it would be by the imposition of this tax: and in most of the metropolitan hospitals there are more demands for admission than the funds will allow of.

At the Manchester Infirmary the income in 1862 was 11,921*l.* 19s. 5d., the expenditure 11,468*l.* 19s. 5d.; but there had been an unexpected legacy during the year of 4,304*l.* 10s. The tax, if levied on this hospital, would be very heavy. We might multiply these instances, but it does not require much argument to show that it would be a great error to lay a Government tax upon establishments of this description, which have been founded and endowed by charitable individuals for the purpose of succouring suffering humanity. In certain cases the intentions of those who have made charitable bequests have either been perverted, or the original intention has not been carried out in correspondence with the existing circumstances; but for the most part not only the hospitals, but also schools and other institutions, particularly those which are of comparatively recent date, extend in usefulness in correspondence with the extent of funds at their disposal.

In order to show more clearly the effect which the withdrawal of the sum of even a few hundred pounds a year would have on some of these charities, we give the following statement in connexion with the Manchester Infirmary. The income in 1862 was 11,921*l.* 19s. 5d., and for this sum the number of those admitted into the house or who were in other ways attended to, was, in-patients, 1,858; out-patients, 24,924; home-patients (persons attended to in their own homes, and assisted with medicine and advice), 3,733; fever-ward patients, 188: total, 30,703. The average cost of each patient was about 7s. 8d. It will thus be seen to what a great extent the appropriation of each 100*l.* would withdraw the most necessary medical relief from the poor.

In 1861 the number of cases received at the Islington Fever Hospital was 663, the cost of the year being 2,275*l.* 18s. 1d. This shows a charge of about 3*l.* 8s. for each, and all are in-patients, many of whom obliged to remain for a considerable period in the wards.

Look, for another instance, at the Child's Hospital in Great Ormond-street, and the City Mission, the benefit of which amongst the masses of the London poor can only be appreciated by those who have seen its effect in connexion with this society. The number of missionaries who are sent into the London shadows depends upon the amount of the income. To levy a tax upon this would be the means of depriving neglected districts of the advantage of the labours of some of these earnest men. The value of the amount which would be derived from this source by the State would be but trifling in comparison with the evil which would result. Government has wisely withdrawn their proposition; but these observations are nevertheless needed.

UNCOVERING OF THE MEMORIAL OF THE EXHIBITION OF 1851.

THE arrangements for this ceremonial have now been determined on. The Council and Executive Committee of the Memorial Committee having learned that a later day than the 5th of June would be more convenient for some of the members of the Royal Family, took the pleasure of Her Majesty and H.R.H. the Prince of Wales on the subject, and it has consequently been altered to the 10th of June. The ceremony will take place partly in the Horticultural Garden and partly in the Exhibition Building, which for the day is to be open to visitors to the garden.

The general nature of the proceedings may be described as a reception, a procession, the presentation of addresses, and the uncovering of the Memorial, as executed by Mr. Durham.

The bodies who are to have the honour of taking a prominent part in the proceedings of the day are, the Committee of the Memorial of 1851, by whose persevering exertions for years the Memorial has, through many difficulties and much labour, at last reached its present crowning point; and the Council of the Society, who are the hosts of the great personages who are to honour the garden with their presence.

The Memorial Committee will receive their Royal Highnesses the Prince and Princess of Wales on their arrival at one of the entrances of the Exhibition building, and will conduct them to the platform under the western dome. Here the guests who are to walk in the procession will assemble. Every one who takes part in it is required to be in uniform, court dress, or robes of office. During the assembling of the guests music will be performed both in the building and in the garden.

The procession will move down the nave of the building, and, turning to the left, ascend to the refreshment rooms overlooking the garden. The first idea was to conduct their Royal Highnesses to this spot chiefly for the sake of the view of the garden to be obtained from the refreshment windows, and to return from thence to the front of the great fountain, and there, on a large dais, to perform the greatest part of the ceremonies of the day. The obstruction which such an erection, in the very centre of the garden, would offer to the view of the spectators, led to this plan being abandoned in favour of that now adopted. In front of the refreshment rooms, at the bottom of the garden, and directly over the middle portico, is to be erected a balcony capable of holding the whole procession, sloping down in successive tiers, thus forming a splendid bank, in the front rank of which their Royal Highnesses will take their place. Here, in full view of the crowds in the garden, high enough to be seen by every one, and not too high for recognition, the chief ceremonial of the day will take place.

The first part of this will consist in the Council of the Royal Horticultural Society handing an address to their Royal Highnesses, and receiving a reply.

Their Royal Highnesses will then be seated.

A short piece of music will be performed. At its conclusion the Executive Committee of the Memorial Committee will come forward and read an address. H.R.H. the Prince of Wales will reply. His Royal Highness will then order the uncovering of the Memorial. A flourish of trumpets will announce the fact, and artillery from a battery behind the Conservatory will proclaim it to the public without. Their Royal Highnesses will then resume their seats, and three united bands will perform a piece of music.

On its conclusion, the procession will leave the balcony and descend into the garden, and escort the Royal party round the garden. They will first proceed up the left side to the Conservatory: they will then pass round the large basin, so as to view the Memorial more closely on every side. Returning to the Conservatory they will resume their tour of the garden, and take their departure at the Council-room entrance. The whole route of the procession will be marked out with barriers and banners.

THE VENTILATION OF UNDERGROUND RAILWAYS.

THE ventilation of the Metropolitan Underground Railway still requires improvement. At the King's-cross station, the sulphurous fumes which escape from the tunnel are both unpleasant and unwholesome; and some of the other stations are even much worse. This condition of the atmosphere cannot be good for passengers, particularly those who are in delicate health; but on the numerous men who are employed, we are told that the effect of remaining for many hours in the bad air which is to be met at several points is highly injurious, and "more," some say, "than a man can long stand."

We have been in many mines, but do not remember meeting with anything so suffocating as the air is here. At some times it is much worse than at others; the matter depending, in a measure, on the direction of the wind and state of the external atmosphere. Certain improvements have been made, but still more effectual means are required for the ventilation of the tunnels, and also of most of the stations. The number of trains which pass and repass in each day is very large; but that is required for the public conve-

nience. On Sundays forty-eight trains pass down, and the same number up; in all ninety-six: but on week days there are seventy-five down and the same number up, in all a hundred and fifty trains. This rapid succession of trains, which on week days continues from six o'clock in the morning until twelve o'clock at night, makes extraordinary means of ventilation necessary. The experience here gained should induce those engaged in new works to endeavour to prevent what is here complained of. By some alteration in the locomotive it may be possible still farther to consume the gases; but until this be done many more air-shafts than are in the tunnel from King's-cross westward are required.

"THE LAST SUPPER."

AT the German Gallery, in Bond-street, will be found a remarkable version by Mr. H. C. Selous, of the well-known "Last Supper," painted by Leonardo da Vinci, on the wall of the Dominican Convent of Santa Madonna della Grazzie, in Milan. This noble work is, perhaps, better known all over the world than any other picture, through copies and engravings; notably by Raphael Morghen's very inaccurate translation. Mr. Selous has chiefly availed himself of the celebrated copy by Marco Oggione. It is well remarked in Mr. Wornum's excellent "Epochs of Painting, Ancient and Modern," that the mere fact that Oggione's copy was painted for people well acquainted with the original in its perfect state, by a distinguished scholar of Leonardo, ought to be a sufficient guarantee for its fidelity. Mr. Selous has referred largely to this in completing the present restoration; but he has also availed himself of the more important privilege of perusing and working from the original studies made by Leonardo. The copy by Oggione, was purchased many years ago, on the Continent, by Sir Thomas Lawrence, for the English Royal Academy of Arts, where it is now located. It has become invaluable as the most authentic record which is known to exist of its great original. But Sir Thomas Lawrence's homage to the fame of Leonardo did not terminate with this acquisition. Having heard of the existence of thirteen of the original studies made by Leonardo for "The Last Supper," he left no stone unturned to become their possessor; and after the most indefatigable researches, and the expenditure of a very large sum of money, he became possessed of no fewer than twelve of the number. These drawings, which are executed in coloured chalks, are of a most vigorous character, and seem to confirm in no slight degree the reputation for fidelity of Marco Oggione's copy. The chief object of the "restoration" by Mr. Selous is, that the picture may be repeated by Messrs. Day & Son, in chromolithography, at such a price as to place it within reach of a large circle. The painting will do much to advance the reputation of Mr. Selous. The versatility of his talent and the extent of his industry, are alike remarkable.

THE PALACE OF WESTMINSTER.

THE thirteenth report of the Commissioners on the Fine Arts has been issued. It states that, as the whole scheme of decoration for the palace has been considered and decided; and, trusting that the series of works now in progress can be carried on to their completion, it does not appear that the commission need be continued to superintend the execution.

The commissioners report that Daniel Maclise, R.A., has brought to a successful and highly satisfactory termination the large wall-painting, executed in the water-glass method, representing the meeting of Wellington and Blucher after the Battle of Waterloo; and that he has already begun the corresponding painting representing the Death of Nelson.

Anticipating the same industry on the part of Mr. Maclise as he has hitherto manifested, they recommend that, assuming willingness on his part, such portions of the Royal Gallery be subsequently intrusted to him as may still produce a satisfactory arrangement and a relative completeness.

In the Queen's Robing-room, William Dyce, R.A., has, since the date of the last report, been occasionally employed on the frescoes from the legend of King Arthur. The stipulated remuneration for the entire series having been long since received by him, the reporters say that they have only to express their earnest hope that he will see the importance of prosecuting the work with greater assiduity; more especially since his exclusive occupation of the apartment must occasion great inconvenience to her Majesty.

In the Peers' Robing-room, John Rogers Herbert, R.A., has nearly completed a large wall-painting, representing "Moses bringing down the Tables of the Law to the Israelites." The delay has been chiefly in consequence of frequent experiments by the artist in the water-glass method of painting; but, as Mr. Herbert now appears to be satisfied as to the technical process to be adopted, there is no reason why in future he should not proceed much more rapidly.

Charles West Cope, R.A., who has undertaken the Peers' Corridor, has prosecuted his work with equal ability and industry. Five out of the eight paintings of which the series is to consist have been already finished, and the designs for the remaining three have been approved.

In the Commons' Corridor, Edward Matthew Ward, R.A., has completed four of the paintings, executed in fresco, and a sketch for a fifth has been approved.

Among future undertakings, requiring less time, may possibly be included the re-painting of some of the earlier experimental frescoes in the Upper Waiting-hall.

At the close of their report the commissioners say:—"We cannot conclude this our final report without desiring to offer our testimony to the professional skill, as well as the activity, the zeal, and the uprightness with which our secretary, Sir Charles Eastlake, has, during a period of twenty-one years, fulfilled an important and sometimes an invidious task. We know that Sir Charles Eastlake's services were fully appreciated by his Royal Highness the Prince Consort, and we venture to hope that some regard may be shown to those long and meritorious services."

SCULPTURE BY LIVING ARTISTS IN THE HORTICULTURAL SOCIETY'S GARDEN, SOUTH KENSINGTON.

ALTHOUGH we cannot speak of the first exhibition of sculpture here as a great success, it leads us to anticipate well for another year, and most certainly has the effect of improving the gardens and conservatory immensely. Their appearance just now is charming.

Out on the terrace in front of the conservatory is Durham's great statue of the Queen, in bronze, which was originally intended as the crowning statue for the Memorial of the International Exhibition of 1851. This fine figure has been produced in metal by Messrs. Elkington's process of depositing by electrotype, and is a fine specimen of this mode of reproduction of works of art. By this method the cost of bronze statues is reduced, and all risk of imperfect castings, of course, entirely done away with. As our readers are aware, this figure is not to surmount the Memorial, but in its place will be one of the late Prince by the same artist. This figure has also been completed by Messrs. Elkington, and will be fixed on the pedestal in a few days more, to be ready for the public inauguration by the Prince and Princess of Wales in June next. There are several other fine models of figures in the collection. Messrs. G. G. Adams, John Bell, E. Davis, Joseph Durham, Earle, J. Edwards, Fontana, J. H. Foley, E. J. Kuntze, Lawlor, Lynn, MacDowell, Marochetti, W. Calder Marshall, Monti, Munro, Noble, Papworth, Ruddock, Edward B. Stephens, Thorneycroft, Thrupp, Weeks, J. Sherwood Westmacott, and Woodington, are the chief contributors.

THE BRIDGE OF THE LONDON, CHATHAM, AND DOVER RAILWAY, AT BLACKFRIARS.

THE foundation-stone of this bridge was laid on the 2nd instant by Lord Sondes. The new railway bridge will run across the Thames only a few yards from the new Blackfriars Bridge. The railway bridge (of which we have given a view), will have five spans, the centre one being 188 feet, the second and fourth 177 feet 8 inches, and the first and fifth 163 feet span. The abutments will be of brickwork, cased with Portland stone, and the foundations taken down to the London clay, at a depth of 27 feet below Trinity high water. The abutments will be built in coffer-dams of the ordinary construction, but the largest ever executed in this country. The foundations for the piers will be laid at a depth of 55 feet below Trinity high water; and, in order to get to this depth without the expense and inconvenience of coffer-dams, large wrought-iron caissons, 18 feet in diameter, will be sunk into the bed of the river till the required level is reached, when the brickwork will be commenced inside, and carried up 2 feet below low-water line. At this point the masonry of the piers commences, and will be laid within a temporary caisson to 5 feet above Trinity high water. From this height to the level of the underside of girders the piers will consist of clusters of cast-iron columns, of which one will be under each girder. The girders, on the lattice principle, will rest on the tops of the columns, and the headway afforded for navigation will be 30 feet 3 inches above Trinity high water.

The London, Chatham, and Dover line has already one station open,—the Victoria at Pimlico; and the line now in progress, as many of our readers must be already aware, is to obtain a City terminus, irrespective of the South-Eastern line, which it joins at the Norwood Junction. At present the line is now open from the Elephant and Castle to Camberwell and Herne Hill, and is being proceeded with through Dulwich to the Crystal Palace, and thence to Beckenham, from whence a communication will be made with the South-Eastern line, so that, in addition to the stations at Pimlico and Farringdon-street, there will ultimately be stations also in Cannon-street, at London Bridge, and Hungerford. During the building of the bridge a passenger station will be erected in close proximity to the southern abutment of the bridge. It will be called the "Blackfriars Station." This will be opened for traffic in September next, and will be the City terminus of the railway until the completion of the bridge, which will be accomplished by May, 1864. The works between the present temporary terminus of the metropolitan extension of the line at the Elephant and Castle and the Blackfriars Station are being carried on with vigour, and it is expected that the company's line direct from Victoria Station to Beckenham will be ready for opening in July next.

COMPETITION.

Malvern Proprietary College.—Two correspondents assert that the Council received drawings in competition after the date fixed, December 18th, and call for an explanation. The Council should feel themselves bound to place their conduct in a proper light before the profession.

LIVERPOOL EXCHANGE BUILDINGS COMPETITION.

THE Committee have received nearly fifty sets of plans in answer to their advertisement, some of which are said to possess great merit. The old Sessions House is being now cleared out for their proper exhibition, firstly to the Committee, and afterwards to the public. None but members of the Committee will be permitted to see them until the public exhibition takes place.

CHURCH-BUILDING NEWS.

St. John's-wood, London.—The foundation stone of Abbey-road Chapel, St. John's-wood, for members of the Baptist denomination, has been laid on the site selected, adjoining the Abbey-road. The Byzantine style of architecture has been adopted in the erection of the chapel, which it is estimated will cost about 3,000*l.*, and accommodate 1,100 persons. The cost of the freehold site was 2,000*l.* The first step taken was on the 10th December, 1862, when a meeting was held at the Eyre Arms, under the presidency of Sir S. M. Peto, M.P. The chapel has a portico with two arches, a semi-circular apse, and two towers with open belfries and spirelets.

Kensington.—The foundation stone of a new Wesleyan Chapel was laid on Thursday week in Warwick-gardens, Kensington. The design has been furnished by Messrs. Lockwood & Mawson, and consists of a red brick building with Bath stone dressings, finished internally with iron columns and stained deal pews. The contract, for nearly 5,000*l.*, has been taken by Mr. N. Simmonds, of Harrington-street, Hampstead-road.

Hitchin.—All Saints' Church, Clifton, Beds, has been reopened. The building, which is of the twelfth or thirteenth century, was in a very dilapidated condition, and insufficient in accommodation. To meet these requirements, a new north aisle has been erected, the nave and chancel restored, and the whole of the nave, aisle, and chancel, reseated with uniform open seats. The chancel fittings are of Baltic oak. The chancel is paved with Minton's ornamental tiles, whilst Staffordshire tiles have been used for the nave and

aisle. The pulpit, which is open, is of stone inlaid with coloured marbles, and is surmounted by a chaste brass reading-stand and candelabra, by Skidmore, of Coventry, who supplies the whole of the lighting apparatus. A new organ has been erected in the north chancel by Messrs. Bevington. The stained glass windows, by Hardman, are entirely new, and the subject of the west window is "The Judgment Day." Our Saviour is represented as sitting in judgment: on his right hand a multitude are being crowned with glory, and on his left another multitude are passing into perdition. In a small two-light window in the south side of the nave there is a representation of "The Annunciation." There is also a window of stained glass in the north chancel. The other windows are of cathedral green glass, with light borders. The sedilia and piscina in the chancel have been re-sculptured and are restored. The style of the new aisle is Geometrical, and it is built of the sandstone found in the neighbourhood, with Bath stone dressings. The whole of the work has been carried out under the care of Mr. Haycock, jun., of Shrewsbury, the architect, by Messrs. Warren and Mr. G. Jeeves, of Hitchin, and Mr. Davies, of Clifton. The hot-air apparatus was supplied by Mr. Dodwell, of Shrewsbury. The entire expense has been borne by the patron, Mr. Mills.

Caxton (Cambridge).—The parish church of St. Andrew's, Caxton, was re-opened for divine service, after restoration, on April 9th. The restoration has been carried out under the direction of Mr. W. White, architect. The large windows, which were of Perpendicular character, and posterior to the date of the church, were removed, and their place supplied by Early English windows of due proportions. The proportions of the chancel have been restored, the chancel descending by one step from the nave. The original intention of this was judged of from the discovery of the old sill-stone. The chancel stalls and open sittings, prayer-desk, lectern, and pulpit, are of stained varnished deal. The entire expense, about 900*l.*, has been met by the parishioners, the neighbouring clergy and gentry. The expense of the restoration of the church was met partly by the dean and canons of Windsor, and partly by Mr. V. Beldam, of Royston, the lessee of the great tithes.

Pont-Lottyn.—The foundation-stones of Pont-Lottyn Church and Fochrhiw school-room have been laid. Pont-Lottyn is about two miles distant from Fochrhiw. The ceremonial was attended by visitors who came by the Dowlais Iron Company's railway, as did the Bishop of Llandaff on the occasion. The church consists of a nave, north and south aisles, apsidal chancel, south chancel-aisle, and vestry on the north side of the chancel, with the warming-apparatus chamber under it. The materials are native stone walling, with red brick quoins and windows, with bands of red bricks at intervals externally. The style is Early First Pointed. The bell-turret is placed over the chancel-arch. Internally, the nave arcades consist of three wide arches on each side of red and white bricks, resting on Bridgend stone cylindrical shafts with Bath stone caps and bases; the chancel and other arches being treated in a similar way, and the chancel lined with red and white bricks. All the seats are free and unappropriated, and will seat 350 people. The chancel is fitted up with stall-wise seats, prayer-desk, lectern, altar and super-altar, 8 feet long, on a foot-pace raised on four steps; also altar-rail, sedilia, and credence. The pulpit is placed against the north pier of the chancel-arch. In addition to the usual font there is a large bath made for the purpose of baptizing adults by immersion: this is placed, together with the font, close to the west door. The chancel-floor is laid with tiles. Owing to the peculiarity of the site the chancel will be a great height externally, as the ground falls 7 feet from west to east, so that the cill of the east window will be 20 feet from the ground. The roof of the nave is divided into three bays by arched principals, resting on stone corbels; the intermediate rafters being boarded on the under side; making a pentagon with vertical ribs 2 feet apart. The chancel-roof is covered and boarded, with ribs in a way similar to the nave. The aisle roofs are lean-to ones, with rafters and principals boarded at the back. The external covering is native stone slate. The architect is Mr. C. Buckeridge, of Oxford, and the builders are Messrs. James & Price, of Cardiff.

Bakewell.—The church here has, within the last few years, been adorned internally by various benefactors, who have erected stained-glass windows and otherwise beautified it. A new western gable window has been inserted in the Geometrical Gothic style, in keeping with the earlier portions of the church, and in place of the insignificant window which previously occupied the gable. This new window has been glazed by Messrs. Clayton & Bell, of London, with a representation of the Baptism of our Lord. In addition to the above work, the whole western wall has been decorated by Mr. Castell, decorative artist. These works have been all carried out under the direction of Mr. G. Goldie, of London, architect.

Liverpool.—The newly-erected Independent chapel, Norwood-grove, West Derby-road, has been opened for Divine service. The structure, which is of Gothic architecture, has been erected in accordance with plans furnished by Messrs. Poulton & Woodman, of Reading. Mr. Nelson, of Liverpool, was the sole contractor for the work, which it is estimated will cost more than 4,500*l.* The erection is of red sandstone, from the quarries in the immediate neighbourhood, with white Cheshire (Stourton) stone dressings. It is a parallelogram in form, the main entrance being through two doorways coupled under one arch, beneath a four-light window, which forms the principal architectural feature of the elevation, and fronts towards the West Derby-road. A stone porch forms the front entrance into a corridor divided from the chapel by a glazed screen of Gothic design, with doors at either end leading to a gallery constructed at the end of the chapel opposite the platform. On either side of the entrance porch is a turret, and the front is flanked on each side by semi-octagonal projections containing the gallery staircases. The chapel is 82 feet in length, 43 feet in width, and 42 feet in height from the floor to the apex of the ceiling, and will afford accommodation for from 850 to 900 persons. All the seats are open benches, formed of pitch pine and varnished; and the gallery, constructed of the same material, has open ironwork in keeping with the other decorations of the building. The windows are the workmanship of Messrs. Edmundson & Son, of Manchester. The front and side windows are all formed of rolled cathedral quarries, with illuminated borders and foliated tracery, except the principal window, which consists of geometrical lights, stained and painted. The ceiling, which is vaulted and plastered, is divided into bays by groined ribs springing from stone columns attached to the walls, with carved capitals of characteristic foliage. In lieu of a pulpit, an octagonal platform, 13 feet in diameter, has been constructed within an apse at the extremity of the chapel. This structure is of Caen stone, divided into panels, each containing two quatrefoils, filled with open ironwork, through which either hot or cold air can be forced at pleasure. The angles of the cornice of this platform are filled with stone carving of varying design, and the apse, which is divided from the main body of the chapel by a moulded arch supported on carved capitals and foliated bosses, is enriched with a series of carvings in stone of natural foliage conventionally treated. The stone carving throughout the building has been executed by Mr. Maurice Geflowski, sculptor. The chapel is lighted at night by means of starlights suspended from the roof, and in the portico and back approaches are lamps. In the rear of the chapel, upon the ground floor, are vestries, with lecture-room and library above; and arrangements have been made whereby a school-room can be attached to one side of the building. The chapel has at present but one small gallery immediately above the main entrance, but has been so constructed as to admit of side galleries. The ground is inclosed by a red sandstone wall, with Cheshire stone plinths and carved finials at the two principal gates, which will be lighted by four massive lamps. The entire building has been erected under the superintendence of Mr. William Laidlaw, clerk of the works.——The lecture-hall of the Trinity United Presbyterian Church, Devonshire-road, Claughton, has been opened for public worship. This hall is intended as a portion of a much larger edifice, which will consist of a church proper, with nave and transepts, and will be capable of accommodating from 800 to 1,000 persons. It is to be in the Gothic style, built of Stourton stone, and will have a tower and spire in the inner angle between the nave and a transept. The lecture-hall forms a semi-circular apse, being the north and south sides, broken by small transeptal gables filled with triplet windows, the apse itself being lighted with a range of fourteen single lights. The entrance porch, session-room, and vestry, are placed between the lecture-hall and the intended church, and over the session-room there will be erected a gallery passing into the lecture-hall. At present the session-room forms a large recess and platform, on which is placed the pulpit. The hall, which will at present and until the erection of the church be used as a place of worship, affords accommodation for about 300 persons. The roof of the building is open, showing the timbers up to the cross braces, where it is sealed. The whole of the joiners' work is stained and varnished. Underneath the hall there is accommodation for *soirées* and social gatherings. The building has been erected by Mr. Westmoreland, of Islington, Liverpool, from the designs furnished by Messrs. J. & W. Hay, architects.

GLASGOW ARCHITECTURAL ASSOCIATION.

ON Thursday evening, 30th ult., a lecture was delivered to the members of the association, by Mr. Alexander Thomson, architect (of Messrs. A. & G. Thomson), patron of the association. Mr. Thomas Gildarde, architect, an honorary member, presided. The subject chosen for lecture was a critical analysis of the Classic and Mediæval styles, showing to what an extent the æsthetic element was inherent in each, and how far each was appropriate as the basis of modern design. The lecturer noticed some of the recent works of our popular art-critics, discriminating between what he considered true and what false teaching. In speaking of the requirements of modern times, he strongly advised the members not to use archaic forms in their studies, whether Classic or Gothic, and however much revered through association of ideas; but to exercise thought, and, from the position in which our present civilization places us, combined with the *true* principles of beauty, to form a new style of architecture, capable of keeping this art one of the *fine* arts, as well as a chronicle of the manners of our time.

The lecture was profusely illustrated. A vote of thanks to the lecturer, on the motion of Mr. J. M. Smith, was passed.

BRISTOL SOCIETY OF ARCHITECTS.

AT the meeting held on the 4th instant, Mr. P. W. S. Miles in the chair, the council's report was read by the hon. secretary. This showed that under the new arrangements, the Society included 1 life member, 17 professors of architecture, 3 students, and 21 corresponding and honorary members.

"The principal alterations were, 1st, Extending the operations of the Society to the surrounding towns; 2nd, A new class of members, being gentlemen taking an interest in art; and 3rd, The adoption of summer excursions. Delegates from the Society attended at the first meeting of the Architectural Alliance held in London on 2nd of July last, and, in conjunction with delegates from the architectural societies of London, Scotland, Ireland, Birmingham, Liverpool, Manchester, and the Northern Association, framed rules which have since been accepted as a common basis of action by all the societies represented at that meeting. The council have almost unanimously adopted the scale of charges issued by the Royal Institute of British Architects until such time as the Alliance shall have decided upon this question. The excursions of the past year have been highly successful."

The president suggested the formation of a museum for the use of students.

RAILWAY MATTERS.

ANOTHER railway bridge has been burnt; a large wooden one on the Norwich side of the Ely station. The bridge burnt was situate about 200 yards north of the station, and carried the railway over a large sheet of water. The woodwork, which was very dry, and thickly coated with tar, fell an easy prey to the flames, which are supposed to have been occasioned by the dropping of some live coal upon it from a passing engine.——It has been resolved in the House of Lords, on the motion of Earl Granville, that with respect to the following railway bills,—the East London and Rotherhithe; the Grand Surrey and Commercial Docks; the Metropolitan, Tottenham, and Hampstead; the Rotherhithe; and the London (Victoria section), the orders be discharged, and the fees remitted; and that the said Bills be not further proceeded with during the present session.——A startling scheme has just been introduced to public notice by Mr. Alcock, the member for East Surrey. The projector proposes the formation of an overland railway from London to Calcutta, by way of Constantinople and Teheran. The whole distance is 6,100 miles, and the journey may be accomplished without interruption, except at the Straits of Dover and the Bosphorus. The time in which it may be accomplished would be twelve or fourteen days. Portions of the line, amounting to one-half of the whole, have already been constructed, so that

little more than 3,000 miles have to be laid down. But these 3,000 miles run over a vast region of deserts and mountains.

THE STAGE.

Royal Italian Opera House.—The representations here are proceeding brilliantly. Naudin has won his chief honours in the *Traviata*. The opera altogether was well played. On Thursday evening Mdlle. Adelina Patti was to make her first reappearance, choosing for it the *Sonnambula*.

The Princess's Theatre.—Mr. and Mrs. Charles Kean have returned to the scene of their former triumphs for a few nights, and, without the aid of splendid appliances, to which Mr. Kean's few opponents are fond of ascribing his popularity, are delighting crowded audiences. His Othello is a masterly performance, little known in London.

PARISH BOUNDARIES.

"BEATING THE BOUNDS."

THE day is approaching when the ancient custom is usually celebrated of "beating the bounds" (or boundaries).

In large parishes this time-honoured usage is heartily enjoyed by those who take part in it; and the quickly varied scenes arising from traversing lanes and fields, and passing over water and through streets, alleys, roads, gardens, factories, works, houses, public and private, inside and outside, over and under, are beyond what a non-"bound-beater" can perhaps well imagine.

In these utilitarian days, however, there is a growing tendency to apply the test of *cui bono?* to things antique, middle-aged, and modern.

The custom in question appears to be an immemorial one. It has doubtless, in other days, been of considerable local value.

Is it, however, the most efficient and most convenient machinery for securing the limits of a parish in the year 1863?

The theory is, that a parish shall be completely and faithfully perambulated; its land-marks, wood, iron, or stone ascertained to be duly placed and in good repair, and every encroachment resisted.

Holy Thursday is the day usually appointed for the procession; and in practice I have found that the walking of the boundaries is not an arbitrary performance, but one that takes place as far as expediency prompts. For example: if houses or premises belonging to influential men in the district have been built upon the boundary, the parochial host will make a deviation by passing through an adjoining street or house, simply sending a school-boy through the house which has encroached, although in theory all should have passed through.

With the dwellings of humbler pretensions, "principle" is vindicated; and I have known the pioneers, consisting of half-a-dozen rough and ready hands with saws, pickaxes, and crowbars, called forward to make a passage through bricks and boards, through which the authorities and their followers have marched.

Frequently it is only a garden which trenches on the boundary, and it is of course impossible for a number of people in holiday spirit and in haste to run through a garden, flower or market, without doing some little damage. In small places a passage through is insisted upon. In large ones there is generally a compromise: walls are scaled, roofs climbed, and no force used.

It would thus appear that the greater the trespass on the boundary-wall the greater the impunity which results.

It may, however, be asked, is the boundary-line a real one, consisting of so many feet of earth actually belonging to the parish, or is it a mere mathematical line? At all events, the theory of a clearly-defined walking boundary has long since been exploded. From parochial negligence or the impossibility of maintaining the boundaries houses have been erected in utter defiance of them.

The parochial system in these days is a very different thing to what it was even a century since. People are heedless nowadays as to whether their districts are allocated to St. James, St. John, or All Hallows; and the only advantage in living in certain parishes is, that, owing to the inequalities of the poor-rates, the taxes are somewhat lower.

Whilst, however, the parish system exists, it should unquestionably be preserved in its integrity; but is beating the bounds the system for effecting this most consonant with our present status? In occupying a house on the boundary, should a man have to submit to a periodical invasion by headboroughs, charity children, *cum multis aliis?* As the parish allowed the house to be built, did it not recognise and sanction the right to erect it?

As no man can build a house without it being a matter well known in the neighbourhood, should not exception be taken to its encroachments before completion? Can no better plan be devised than the present inconvenient one? Railways, clubs, banking-houses, docks, museums, &c., cannot be knocked about: why then should small workshops, dwelling-houses, gardens, &c., suffer?

What is no one's special business to look after, invariably meets with neglect. Boundary-marks are frequently removed by the mischievous and the interested. Old plans are continually being affected by the rapid increase in new buildings. The old residents, whose evidence is so frequently relied upon as to what was done on the last boundary day, are constantly "sleeping with their fathers." Some consideration of the matter may perhaps lead to the suggestion of a remedy for the present defective system. P. M. H.

TENDERS FOR THE SURREY COUNTY HOSPITAL.

SIR,—Can you give us any information as to the tenders delivered some time since for the Surrey County Hospital. It is reported that the estimates range from 12,000*l.* to 17,000*l.*, while the architect's own estimate for his design was 7,500*l.* Is this just to the other competitors? A. & B.

CASES UNDER METROPOLITAN BUILDING ACT.

WOODEN BUILDINGS.

ON the 22nd ult., the District Surveyor of Camberwell summoned Mr. Hood, a photographer, before the magistrate of the Lambeth police-court, for having erected at the back of his house a building of wood and glass, contrary to the Act, which requires all buildings to be enclosed "with walls of brick, stone, or other incombustible materials."

Mr. Hood urged, that as he had attached wheels to this building, so that it could be removed from one place to another, he considered the erection exempt from the operation of the Act. The magistrate, however, took a different view of the matter, and made an order for Mr. Hood to amend the irregularity complained of.

ROTHERHAM WATER BILL.

SIR,—I am sure no one would have a greater aversion than myself to charging any one unjustly; and if I have been the means of giving publicity to what is not true, I trust that when I say I extremely regret it, Mr. Hawksley will accept this as my apology.

But let us look at the matter a little further. Had Mr. Hawksley, in his reply, said that he did not mention Worksop in his evidence on the Rotherham Water Bill, I should have been bound to believe him; but when the proprietor of the *Sheffield Independent* had his report "from a London reporter specially engaged for the purpose," I do not think that it is surprising that I should expect the report to be correct. I read various reports in the respectable journals of the day, and always considered they were to be relied upon: if, however, the truth of such reports is to be inquired into, I conceive their readers will greatly diminish.

ROBERT WHITE.

Books Received.

ENGINEERS' POCKET-BOOKS.

Pocket-Book of Useful Formulæ and Memoranda for Civil and Mechanical Engineers, by GUILFORD L. MOLESWORTH, C.E. (Spon, London). This is really a *pocket*-book, and a most useful and valuable one of its kind. Many of the formulæ are, of course, not original; but the whole is exceedingly well condensed, and the little volume contains numerous formulæ and memoranda on a great variety of subjects. Mr. Molesworth, we may remark, is the principal resident engineer of the Ceylon Railway.

The Engineers' Pocket Remembrancer. An Epitome of Data, Rules, and Formulæ, applicable to Civil, Mechanical, Marine, Hydraulic, Lighthouse, Telegraphic, Railway, and Gas Engineering, Surveying, &c. By FRANCIS CAMPIN, C.E. London: Atchley & Co. This is not quite so small and handy a book for the pocket, and assumes the shape of an ordinary volume: it is better suited for use in offices, and contains many useful tables. The author is the president of the Civil and Mechanical Engineers' Society.

VARIORUM.

"The Australian Builders' Price-book." By C. Mayes, C.E., and architect. Melbourne: Sands & McDougall. 1862. This price-book appears to be esteemed by professional authorities in the Colonies.——"The Shilling Guide to the London Charities, for 1863." By Herbert Fry. London: Hardwicke. In alphabetical order and running columns, this Guide shows the name, date of foundation, address, objects, and annual incomes, number of people benefited by, mode of application to, and chief offices of, the London charities. ——"The Science of Ship-building considered in its relations to the Laws of Nature;" illustrated. By B. Bowlby Willson, of Canada. London: Potter, Poultry. 1863;—a suggestive treatise by one who seems to have thought for himself on the subject, but without much mathematical lore. ——"Holmes's Magneto-electric Light, as applicable to Light-houses. We have here an account prepared, apparently, at the instance of the proprietors, of the very brilliant and promising light already in use at the Dungeness light-house, and which has Professor Faraday's approval as one which "promises many improvements during its further development." The descriptive and other matter is accompanied by an engraved view of Holmes's interesting magneto-electric light apparatus.—— The principal article in the present number of the *Gentleman's Magazine* is an illustrated one on "Irish Round Towers."——"London Society" has a large number of capital illustrations, as usual, including a portrait of the "father" of the Academy,—Mulready (made R.A. in 1816),—and a very good notice accompanying it.——The present *Quarterly* is a number of varied interest: Colenso, and Salmon; India, America, Kinglake, and sensational novels are the subjects treated of, with the leanings that belong to it. It is itself, as it says of a sensational novel,—

"About peas-pudding and porridge, about the Spartans,
About the war, about the pilchard fishery,
About the state of things in general,
About short weights and measures in the market,
About all things and persons whatsoever."

——Appleby's "Illustrated Handbook and Price Current of Machinery and Ironwork" (Spon, Bucklersbury), is a trade catalogue, and something more. Contractors, engineers, and others will find it useful.

Miscellanea.

THE MARRIAGES OF ENGLISH KINGS AND QUEENS.—The correspondent who sent us a list, printed at p. 259, *ante*, made two or three slips, which call for correction. Thus: Edward I.'s second wife was Margaret, daughter of Philip III. of France, and not Isabella; and Edward II. married Isabella, daughter of Philip IV., of France.

THE ROYAL SOCIETY.—On Saturday evening last Burlington House was thrown open for a second *conversazione*, held by General Sabine as President. The arrival of visitors continued till a late hour, the latest being those who quitted the table of the Royal Academy for the *soirée*. About twenty minutes to eleven their Royal Highnesses the Prince of Wales and the Prince Louis of Hesse arrived, and were received at the foot of the stairs by the President and secretaries. The attendance was numerous.

ARTS OF JAPAN.—At the Royal Institution, on Friday, May 1, a lecture was delivered by Mr. John Leighton, F.S.A., upon "The Arts of Japan; illustrated by native examples." Mr. Leighton, having touched upon the people and their isolation, contrasted the Chinese and Japanese, awarding the palm to the latter, who, though seeking seclusion, seem alive to progress and ready to avail themselves of European discovery. After touching upon the architecture, sculpture, and arts of drawing and design, he proceeded to sum up the evidence, noting where they were our superiors and where deficient; the last inheritance of the European school—powerful use of light and shade—being wanting, though form, colour, and perspective are most effectively used in Japan.

LIVERPOOL ARCHITECTURAL SOCIETY.—The meeting, on Wednesday evening, 22nd ult., was presided over by Mr. Weightman. Mr. Kilpin gave notice of motion to the effect that the report of the proceedings of each preceding meeting should be read at the general meeting, as he thought the adoption of such a system would enable members who had not attended the previous meeting to make themselves acquainted with the opinions and views expressed thereat; while those who had attended would have their memories refreshed. Mr. J. A. Picton suggested that, in future, the Society should make excursions to different places for the purpose of deriving information as to architecture and archæology, and it was understood that the subject would be taken into consideration. A paper by Mr. P. H. Horner was read, "On some of the Analogies of Architecture." A discussion followed.

CONSECRATION OF A ROMAN CATHOLIC CHURCH IN CAMBERWELL.—A newly-erected Roman Catholic church, in the Wyndham-road, Camberwell, has been consecrated by the Roman Catholic Bishop of Southwark. The edifice is styled "The Church of the Sacred Heart," and contains sittings for about 700 or 800 persons.

BERKS.—The mansion of Sir C. D. Crosley, Sunningdale, Berks, having undergone extensive repairs and decorations, under the superintendence of Mr. Alfred Smith, by Messrs. Holland & Hannen, builders, the men employed were regaled with a dinner on Friday evening, the 1st inst.; Mr. Thomas Sneezum presiding as chairman.

ACCIDENTS.—About twenty *employés* of Messrs. Houlden & Parker, cabinet-makers, of Church-street, Liverpool, were at tea the other evening, when the flooring of the room in which they were sitting fell in, the whole of those present, as well as the *débris* of the floor, going through the one below it. As the shop is situate in one of the principal thoroughfares of the town, the crash and the screams of the people injured by the accident created great consternation. The cause of the accident is not positively known, but the building will have to be pulled down.——A house in Burley-terrace, Leeds, has been set on fire by the overheating of a flue in an adjoining house.

ASTRONOMICAL CALCULATIONS. — Among the communications made at the last meeting of the Astronomical Society, was one from Mr. Stone, principal assistant at the Royal Observatory, Greenwich. Mr. Stone had completed the calculations of the mean horizontal parallax of the sun, as deduced from observations made at Greenwich on the planet Mars at his recent opposition, compared with other similar observations made in Australia. The result is that the heretofore received mean distance of the earth from the sun must be diminished by about three millions of miles! What a corollary this is on the dogmatical and supercilious assurance with which some astronomers lay down the law to lay thinkers on the subject of astronomical science!

TURBINE.—An improved turbine has been provisionally specified by Professor Charles Fink, of Berlin, which is constructed with a fixed outer ring of adjustible direction vanes, contained between two parallel horizontal annular surfaces, between which adjustible vanes the actuating water passes, and is directed by them into and through a series of buckets or openings formed with or attached to a ring or wheel attached to a shaft or spindle, and free to revolve within the ring first mentioned. The actuating water, after passing through the buckets of the inner ring or wheel (and thereby giving a rotary motion to the same, and to the shaft or spindle upon which it is fixed), passes downward through a suitably formed pipe or tube, from which it is ultimately led away in any convenient manner. The necessary movement for adjusting the vanes to any required angle may be imparted to the annular ring by levers or other convenient or suitable means.

THE FINE ARTS IN LIVERPOOL: ONE EXHIBITION.—We are glad to learn, from the *Albion*, that the negotiations between the gentlemen interested in Art for the establishment of *one* exhibition in Liverpool have been successful. During the last five years there have been two exhibitions —one in Bold-street, upheld by the Society of Fine Arts, and the other in Post-office-place, managed by artists forming the Liverpool Academy. The Liverpool Academy, now established for many years in Liverpool, resolved a few months ago to cease holding an annual exhibition in their rooms, and to withdraw from a contest which they had not the means to carry on. Upon their giving up these rooms, several gentlemen who had shown an interest in the matter agreed to take the lease, and so relieve the artists of their responsibility. But, to prevent any impression that this was intended as a new opposition, these gentlemen at once made proposals for a union of the friends of art in the town, and after prolonged negotiations have brought the matter to a successful termination. The Liverpool Institution of the Fine Arts is the title of the amalgamated societies. The exhibitions will in future be held in Post-office-place. Considerable misapprehension has existed regarding the negotiations which have led to the generally-desired union of the Liverpool Academy and the Society of Fine Arts. We understand that the advances which have resulted in so satisfactory an arrangement emanated from the last-named society, and not from the Academy.

A NEW FIRM: "SEMPER FIDELIS."—Miss Faithfull and her company of the Victoria Press have taken the arms of a lion on the alert—looking for business, perhaps, says one—with the appropriate motto, "Fidelis et Firmus,"—"Faithfull & Co.," we presume.

THE DRINKING-FOUNTAIN MOVEMENT.—The committee at Merthyr for conducting the Prince of Wales's marriage festivities, after paying all claims, find themselves in possession of a large surplus, and have resolved to expend it in the erection of a public drinking-fountain. They have selected a design by the Coalbrookdale Company, and it will be erected in front of St. David's Church, and bear an appropriate inscription commemorative of the auspicious event.

BOOT-BRUSHING MACHINE.—An engine-man, Mr. Joseph Polson, Edinburgh, has invented a machine for blacking and brushing boots and shoes. The brushes, which are hollowed to suit the rounded shape of the boot or shoe, move horizontally with great rapidity, and give about 300 strokes per minute, being five or six times the number produced by a strong hand and arm. It is to be hoped the strokes will steer clear of the corny toe if the boot proprietor put his foot in it for the occasion.

WOOD-LICE IN CHURCHES.—A correspondent asks for information as to means of getting rid of wood-lice in a church. Various recipes for destroying insects of different kinds have been given in our columns; but we do not think "Keating's Insect-destroying Powder" has been mentioned. We have found it effectual in destroying insects in a garden, and it is said to be equally useful in clearing away such pests as fleas, bugs, &c.: it might, therefore, be sprinkled about the resorts of the wood-lice; and we dare say that in a short time they may thus be got rid of. We should like to know the result. This powder (unlike Keating's Vermin-killing Powder) is said to be "harmless to animals," although destructive to all sorts of insects. For flying and some other insects it is used as a fumigant, sprinkled on red-hot coals or wood, or set fire to after being twisted up in a piece of paper.

A WORKMAN'S TOOLS DISTRAINED ON ANOTHER'S PREMISES.—*Benham* v. *Weller*.—The plaintiff in this case had been working on defendant's premises, and had put his tools down and left the shed in which he had been working, intending to return almost immediately. In the mean time the tools were seized. The jury that tried the case at Aylesbury gave a verdict for the defendant. At the Court of Queen's Bench on Monday, on the application to set aside this verdict, a rule was refused, on the ground that the rule of the law which privileged tools of trade from distress only applied where they were in actual use and in actual manual possession, because the reason of the rule was the danger of personal violence and breach of the peace. No doubt, if the man had merely laid the tool down before him, and it was seized before he could take it up again, the case might be within the rule; but here he had left the place, and, therefore, the reason of the rule did not apply, and there was nothing else to distrain.

NEW BRIDGES OVER THE THAMES.—The Committee of the House of Lords, of which Lord Taunton is chairman, with consideration of the proposed Albert Bridge across the Thames, decided;—"That the committee are unwilling, without a more pressing necessity than has been shown in the case, to sanction the erection of a new proprietary bridge over the Thames, with tolls in perpetuity; and they are further of opinion that it is desirable and of urgent importance that the whole question of bridge accommodation between the two sides of the river, within the metropolitan district, should receive the early consideration of some public authority, specially with the object of providing for the abolition of all tolls on them, as far as possible. For these reasons the committee were of opinion that it was not expedient to proceed with the Bill, which is, consequently, thrown out." The case of the Putney and Fulham new bridge was considered. It is proposed to construct the bridge from Putney to Fulham a little to the eastward of the existing Putney Bridge, on the suspension principle, with three spans. The centre of the bridge is to have a headway of not less than 21 feet above Trinity high-water mark, and at the abutments of 8 feet, with a pier and landing-stage. The committee, after taking evidence corroborative of the objects of the Bill, agreed to pass to the subject of provisoes giving compensation to the proprietors of old Putney Bridge, to be assessed by arbitration or a jury.

SEWERAGE OF BUXTON.—Mr. E. W. Wilmot, the chairman of the local board, has resigned his seat, the board having decided, almost unanimously, that, for the future, no sewers of any sort shall be put in at the public cost,—a decision, he considers, alike unjust and impolitic.

THE LATE MR. W. HARRIS, ARCHITECT.—We have to mention the death, on the 1st of April, of Mr. William Harris, architect, of 55, Park-street, Grosvenor-square, sixty-six years of age. Mr. Harris was a pupil of the late A. Welby Pugin, and gave the designs for Queen's-gate-terrace, Gore-road, and other private buildings.

A TIMBER-FELLING MACHINE.—To those desirous of raising a few thousands by their timber, it will be interesting to be informed that a talented Scotchman has lightened the difficulty as to time by inventing a machine as portable as a wheel-barrow, which, it is said, is capable of cutting down as much wood in one day as two men could accomplish in a week. It is easily worked. The inventor, Mr. M'Glashan, resides at Dun Alaister, Pitlochie.

NEW BELLS. — Among recent bell-foundry doings, it may be mentioned that the following have been turned out by Messrs. Warner & Sons. In the last two months they have cast two "memorial bells." 1st. A 20-inch bell, bearing a medallion portrait of the late Prince Consort. It was cast as an addition to the peal for the Rev. S. M. Ware, Helenswick Rectory, Bromyard. (This is the second they have cast in memory of the late Prince). 2nd. A bell of about 7 cwt. for Newfoundland, with the following inscription:—

"In memory of the great seal haul,
A.D. 1862.
St. Peter's, Twillingate.
V. R.
25."

3rd. Three bells supplied to the Grey Friars Church, Reading. 4th. The bell at St. Philip's Church, Kennington-road. 5th. The bell at the New Agar Town Church. 6th. A new peal of three bells hung at the church at Foot's Cray.

CARLTON HOUSE TERRACE, LONDON. — Mr. Locke (in the House of Commons) asked the Chief Commissioner of Works whether he intended to complete Carlton House-terrace upon the vacant ground where the riding-school stood; and, also, whether he would propose, during the present session, the continuation of the carriage-way from the Mall in St. James's Park to Charing-cross. Sir H. Verney said, before the hon. gentleman answered the question he wished to inquire whether it was intended to continue the road from the east end of Carlton House-terrace to the northern extremity of Spring-gardens, the space for which was vacant by the taking down of the riding-school? Mr. Cowper said Carlton House-terrace would be continued on the ground that was now vacant. Building leases on that ground had been granted by the Crown. It was not his intention, during the present session, to propose the continuation of the carriage-way from the Mall in St. James's Park to Charing-cross. Such an improvement was recommended by a committee of the House in 1856, but it had made no recommendation as to where the funds were to come from.

THE CAMDEN SOCIETY.—The anniversary meeting of the Camden Society was held on Saturday, May 2, being the birthday of its patron the great historian, when the Marquess of Bristol took the chair, and the principal resolutions were moved and seconded by Mr. Tite, M.P., Mr. George Dodd, F.S.A., Mr. Durrant Cooper, and other influential members. The annual report is occupied principally with a statement of the successful result of the Society's efforts for opening the Register of Wills in Doctors' Commons for the use of literary inquirers, which has been conceded by Sir Cresswell Cresswell in respect to all wills of a date anterior to the year 1700. With the view of making generally known the importance of this new source of literary and historical information, the Camden Society has issued a volume of "Wills from Doctors' Commons." The selection belongs to a great variety of memorable characters:—members of the Royal Family; eminent prelates and noblemen; persons who played important parts during the great civil war; well-known poets, painters, and musicians; divines and philosophers; and, lastly, the wills of some distinguished ladies. The Society has issued for the subscription of 1862–63, two other books, viz.:—Lists of Foreign Protestants and Aliens resident in England, 1618—1688, from returns in the State Paper Office, edited by Mr. W. Durrant Cooper, F.S.A.; and the Trevelyan Papers, Part II., from 1551 to 1643, edited by Mr. J. Payne Collier, from the Muniments of the Trevelyan Family.

ST. MARTIN'S SCHOOL OF ART.—The seventh annual *conversazione* of this school (Castle-street, Long-acre), will be held on Thursday evening, the 14th instant.

THE CARDIFF ASSOCIATION OF MASTER BUILDERS.—About eight years since, during the time of a strike of masons and other workmen, an association bearing this name was formed at Cardiff. Since then but few circumstances have occurred to call for combination, and the association has somewhat languished. Circumstances, however, have recently taken place which induced several of the members to resuscitate the society; and as one of the best means of doing so, it was purposed to extend an invitation to all the masters connected with building interests to a social dinner. This dinner has just been held at the Queen's Hotel, when a large assembly of master builders met on the occasion. Mr. C. Pearson presided; and the two vice-chairmen were Mr. Daniel Jones and Mr. W. P. James.

RAGS AND PAPER. — A return shows that within the last seven years the imports of rags and paper in the United Kingdom have been as follows:—In 1856, 10,287 tons of rags, 15,767 cwts. of foreign paper; 1857, 12,206 tons of rags, 12,057 cwts. of paper; 1858, 11,394 tons of rags, 11,701 cwts. of paper; 1859, 14,621 tons of rags, 18,338 cwts. of paper; 1860, 16,154 tons of rags, 45,019 cwts. of paper; 1861, 20,486 tons of rags, 94,358 cwts. of paper; 1862, 23,943 tons of rags, 193,639 cwts. of paper. Thus the imports of rags have more than doubled since 1856, while the imports of foreign paper have increased since that period by 177,872 cwts. The exports of British paper in 1858 were 106,557 cwts.; 1859, 126,454; 1860, 112,514; 1861, 91,958; 1862, 129,440. These facts bear out the anticipations of Mr. Gladstone, which were met with much ridicule and opposition three years since.

THE THREATENED LUDGATE-HILL VIADUCT.—It is so far satisfactory to know that the London, Chatham, and Dover Railway Company appear to have themselves abandoned their scheme for the proposed viaduct; but they have only relinquished their powers for the construction of this portion of their original scheme in favour of a new company formed under the title of the Ludgate Station and Junction Railway Company, which, so far as regards the original company, betrays their anxiety to be rid of the odious task of disfiguring one of the most central thoroughfares in London. It is to be hoped the new company will *not* be empowered to carry out the viaduct in question; nor that Parliament will grant the extension of time asked for by the original company beyond next August for carrying out this new form of their project. There is no absolute necessity for a viaduct, and we do not see why it should be carried out at all, so long as an underground line below Ludgate-hill is possible, in order to complete the connexion of the present underground line with the south. The Ludgate-hill inhabitants and proprietors, we are glad to observe, are stirring in this matter, and a committee have addressed the individual members of the House of Lords on the subject. The City Court of Sewers appear to think the viaduct must be permitted.

YARMOUTH SCHOOL OF ART.—There was a very crowded attendance at the Town-hall to witness the distribution of prizes awarded at the last examination to the students of this and various other public schools. About 130 prizes had been awarded, and amongst them were eight medals and seven books, the latter being received by those who had been successful in obtaining medals in previous years. At the last distribution, held about six months ago, Dr. Stephenson promised to give a series of lectures on anatomy and physiology, and to present a silver medal, value two guineas, to the student who at the termination of the course would draw up the best outline of the subjects treated upon. The lectures, eight in number, were duly delivered, and were well attended. Mr. Barrett, master of the charity school, was successful in winning the medal. The mayor occupied the chair, and in opening the proceedings, he observed that the hon. secretary (Mr. Harmer) had put into his hands a paper by which he saw that a larger number of pupils had passed at the last examination, both in the school of art and in the public schools, than at any period since the establishment of the institution in this town. There were not, however, so many prizes this year, because the standard of merit necessary to obtain them had been raised. The standard was so low that almost every pupil obtained a prize.

PUBLIC WORKS FOR THE UNEMPLOYED.—Mr. Rawlinson has been appointed by the Government to proceed to the cotton districts, for the purpose of reporting to the Government on the one hand, and of communicating with the local authorities on the other, as to the needs and capabilities of those districts in the way of works of public improvement, and the possibility of employing the able-bodied cotton workers on such works, at fair wages. He has been over a portion of the district,—Stockport, Oldham, and Blackburn,—and works will be set out at once if the money necessary can be obtained on easy terms—say 3½ per cent.—and the redemption fund be deferred for three years. Government may lend one or more millions on safe security, so as to have every able-bodied industrious man set to useful and beneficial work. The men can and will work for fair wages; and the corporations and local boards will find the work if the money be obtainable on the terms named. A short Act will be required.

IRON AS A TONIC IN THE VEGETABLE CREATION.—A curious discovery is alleged to have just been made regarding the influence of iron on vegetation. Preparations of iron are used in the animal world as a medicine where the blood is poor in red particles. The pale cheeks of the invalid often regain their bloom under the influence of such tonics. It is much the same, it appears, with plants. On the chalky soils of France and England, where there is an absence of iron, vegetation has a sere and blanched appearance. This is entirely removed, it is said, by the application of a solution of sulphate of iron. Haricot beans watered with this substance acquired an additional weight of sixty per cent.! [How would a few doses of cod-liver oil agree with them?] Mulberries, peaches, pears, vines, and wheat derive advantages from the same treatment. It is expected that the salts of iron will be found as beneficial in farming as in horticulture, but the experiments are as yet very incomplete. In the cultivation of clover, however, wonderful advantages are declared to have been gained. The material is cheap, and the quantity applied is small.

TENDERS.

For building warehouses in Cannon-street, City, for Messrs. Palmer, Phillips, & Faithful. Mr. H. S. Legg, architect. Quantities furnished by Mr. R. Roberts:—

Brown & Robinson	£15,300 0 0
Holland & Hannen	14,980 0 0
Cubitt	14,860 0 0
Myers	14,745 0 0
Lawrence	14,573 0 0
Brass	14,473 0 0
Downs (accepted)	13,940 0 0
Rider	13,918 0 0

For St. John's Church, East Dulwich:—

Cannon	£7,214 0 0
Mansfield	7,135 0 0
Brown & Robinson	6,985 0 0
Patrick	6,985 0 0
Macey	6,887 0 0
Constable	6,834 0 0
Tarrant	6,800 0 0
Thompson	6,765 0 0
Jackson & Shaw	6,750 0 0
Dove, Brothers	6,545 0 0
Sawyer (accepted)	6,443 0 0

For St. Luke's church, Warlingham. Mr. R. W. Drew, M.A., architect. Quantities supplied by Mr. J. A. Bunker:—

Ward	£1,694 0 0
Wells	1,630 0 0
Downs	1,590 0 0
Turner & Sons	1,467 0 0
Carruthers	1,450 0 0
Rowe	1,369 0 0
Newcombe	1,349 0 0

Accepted for Wetherby Union Workhouse, West Riding of Yorkshire. Messrs. J. B. & Wm. Atkinson, architects, York:—

Masonry and Brickwork.	
Keswick	£1,550 0 0
Plastering.	
Jennings	139 18 0
Carpenter and Joiner's Work, and Hardware.	
Bellerby	693 0 0
Plumbing and Glazing.	
Bradbury	236 0 0
Slating.	
Cattley & Sons	197 0 0
Painting.	
West	38 0 0
	2,853 18 0

For a pair of semi-detached villas, at Kentish Town. Mr. Thomas T. Green, architect. Quantities supplied:—

Stevenson	£1,552 16 0
Scrivener & White	1,515 14 0
Palmer	1,512 0 0
Ward	1,497 0 0
Marshall	1,495 0 0
Davies	..
Manley & Rogers	1,430 0 0
Curtis & Ventham	1,130 12 6

For repairs, &c., to the Leather Warehouse Company's warehouses, Bermondsey. Messrs. Porters & Markham, architects. Quantities not supplied:—

Colls	£498 0 0
Little	479 0 0
Wills	468 0 0
Wells	453 0 0
Bargeman	435 0 0
Coleman	426 0 0
Peake	425 0 0
Simms (accepted)	395 0 0

For the erection of four dwelling-houses, at Higher Crumpsall, near Manchester, for Mr. William Smith. Mr. Thomas Dale, architect:—

Statham & Sons (accepted)	£2,205 0 0

For the erection of four houses, at Old Trafford, near Manchester, viz.—two for Mr. F. J. Ainsworth, and two for Mr. George Richards. Mr. Thomas Dale, architect:—

Statham (accepted), each house	£645 0 0

For an additional fire-proof story on building, at the Mill-hill Cotton Works, Blackburn, for Messrs. Hodgkinson, Swaine, & Codling. Mr. Thomas Dale, architect:—

Stones (accepted)	£2,420 0 0

For construction of sewers in the northern portion of the parish of Clapham. Contract No. 1. Mr. C. W. Johnson, surveyor:—

Moxon	£15,000 0 0
Munday	12,783 0 0
Pearson	12,571 0 0
Blackmore	12,270 0 0
Dowell & Co.	12,101 0 0
Thirsk	11,455 0 0
Kent	11,342 0 0
Hill, Keddell, & Robinson	10,644 0 0
Dethick (accepted)	10,223 0 0

For a new house and offices, near Brigg, Lincolnshire, for Mr. Thomas Freer. Mr. Goddard, architect:—

Wallis & Son	£1,450 0 0
Huddleston	1,375 0 0
Reeve	1,316 0 0

For alterations and additions to the Baptist Chapel and Schools, Weston-super-Mare. Mr. Hans F. Price, architect:—

Stock	£937 10 0
Palmer	9 0 0 0
Thorney	888 0 0
Brock	850 0 0
Lewis	789 10 0

For the erection of seven houses, Holderness-road, Hull. Mr. F. Wright, architect:—

Hall	£2,200 0 0
Holmes	2,122 0 0
G. Jackson (bells omitted)	2,104 5 0
J. Jackson (accepted)	2,013 9 0
Richardson (flagging omitted)	1,875 0 0

For the enlargement and alteration of farm dwelling-house, Middleton-on-the-Wolds. Mr. F. Wright, architect:—

Hewson	£543 0 0

For the erection of a Primitive Methodist Chapel, with school and class-rooms, Spring Bank, Hull. Mr. F. Wright, architect:—

Bricklayer and Plasterer's Work.	
Bailey	£1,100 0 0
Mason's Work.	
Wallis & Tadman	£700 0 0
Carpenter and Joiner, Plumber, Glazier, Gas Fitter, and Painter's Work.	
Stamp	£1,338 0 0
Ironfounder's Work.	
King & Peach	£218 0 0

For additions to house in Bridge-street, Canterbury, for Mr. Peter Martin. Mr. William Wilson, architect. Quantities supplied:—

Wilson	£837 13 0
Lancefield	831 0 0
Cozens	783 10 0
Brett	783 0 0
Shrubsole (accepted)	710 0 0

For the construction of sewers in Queen's-road, and Westbourne-grove, Paddington. Mr. W. Merry, surveyor:—

Dowell & Co.	£8,490 0 0
Cole	6,974 10 0
Phillips	5,583 0 0
Hill	5,550 0 0
Crockett	4,750 0 0
Mann	4,545 0 0
Thirst (accepted)	4,499 0 0

For erecting shop and dwelling in London-street, for Mr. J. R. Sawyer. Mr. W. A. Smith, architect:—

Brooks	£1,129 0 0
Ling & Balls	1,111 0 0
Brown & Baily	1,077 0 0
Boardman (accepted)	1,049 0 0

For the erection of a new refreshment house, at Erith Marshes, Erith, Kent, for Mr. John Russell, of Gravesend. Messrs. T. Dann & Son, architects:—

Williss	£478 0 0
Melton	430 0 0
Francis & Son	395 0 0
Gumbrell (accepted)	390 0 0

For a farmhouse, at Bury, near Ramsey, in the county of Huntingdon, for Mr. P. W. Behagg. Mr. Robert Hutchinson, architect. Quantities supplied:—

Mason	£419 0 0
Richardson	363 10 0
Allen & Smith	331 0 0
Bateman	328 0 0
Heythorpe	328 0 0
Brown & Dring	319 0 0
Bunting & Son	314 11 4
Thackery & Son	314 0 0